

Storage shelves mainframe bid

by Keith Holder

DELAYS and cost overruns have halted plug-compatible manufacturer Storage Technology's bid to become a mainframe manufacturer.

The company has abandoned



MOLLOY... "No guarantees."

development work on its planned 3083 class IBM plug-compatible CMOS processor, a move that will result in a considerable write off for the fourth quarter.

The company admitted that about 400 workers at its Santa Clara research centre have been made redundant, though about 100 have escaped the axe and will continue work on other projects.

UK managing director, Brian Molloy, says that work was halted for two reasons.

"Although the project was running on time last year, it suddenly became apparent that a six to 12 month delay would be imposed by a test programme," he explains, adding: "There was no guarantee that the test would have been completed, even in that time."

He says IBM provided the second setback by launching the 4381. This came in at a lower price than Storage Technology had anticipated and a better "cost per mlp".

"This made the market more competitive, and less attractive for us," says Molloy.

The managing director believes

that having failed with this venture, Storage Technology could opt for a BASF style approach, and buy in processors from one of the established plug processor manufacturers, like Hitachi of Fujitsu. "In any event, we will proceed with caution."

Molloy sees the company's strength remaining with its storage systems. Its 80 product, a plug compatible system to compete with IBM's 3380, is now being shipped in the UK, and is going down well with customers, he says.

Future hopes ride on the company's optical disc storage system. Key personnel have been appointed in the UK to market and support the system, which is due for release by April, and some key customers are being approached to act as reference sites.

Although the product is said to have a lead over other optical systems, Molloy thinks this will have been eroded, together with initial market demand, by the end of 1985. He also thinks that the company will have to come up with another innovative product by that time.

IBM puts users in the picture

by Philip Hunter

IBM MAINFRAME users can now look at stored images of documents at a terminal after making digital "photographs" of them.

IBM UK has announced a £4,800 enhancement to its Scanmaster document reader for this to be done. The facility will be available to all IBM mainframe users running under MVS or VSE operating systems, so long as they also have the DISCOS distributed office software, which controls text transmission between different processors and terminals.

In addition users will need the Scanmaster units costing £8,000 to make use of the new image view facility.

IBM says the new facility will be especially useful for press cutting agencies, which will be able to store digital images of newspaper articles, and peruse them on the screen before printing them on demand.

Previously the only way of looking at documents stored with the Scanmaster was by printing them.

The electronic typewriter and word processor market was worth £15 million - and UK output was £15 million.



BLSDEN... "We have price and power advantage over Vax."

Systime ignores DEC this time

by John Kavanagh

UK SYSTEMS builder Systime is looking outside its main supplier, Digital Equipment, for a new super computer because of the US firm's failure to add to its 32-bit Vax family. And Perkin-Elmer, the scientific processor manufacturer looking to move into the commercial market, is a leading contender for Systime's favours.

Meanwhile, another UK firm, ABS Computers, is preparing to attack the DEC Vax commercial market - with Perkin-Elmer equipment.

Systime has based its systems on DEC processors since its birth in 1972. But product announcements by the likes of Perkin-Elmer and Data General in the last year have overtaken DEC's offerings in price and performance.

"We're concerned about slipping on announcement dates for the new top Vax machine," says Systime director Jan McNeill. "At the same time the existing Vax-11/780 now looks high priced in the 32-bit market. We need bigger machines because our competitors have them."

McNeill says incompatibility problems could be overcome by using the Unix operating system. "We don't specially want to start offering Unix because we don't think it's good enough yet," he says. "It's still a university and technical user system - but it will be OK soon."

ABS managing director John Blsden says DEC had a compatibility gap between its 16-bit PDP-11 computers and the Vax range. ABS sells Perkin-Elmer machines as the Chorse family and is gearing up to go for DEC users.

"We have a price advantage and a power advantage over the Vax," Blsden comments. "DEC users can bring their Control Data discs with them. And with Unix their future is protected."

"DEC is strong on support but we can deal with users on a more personal level. We're smaller than DEC so we can respond quicker."

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SALES BRIEF

£2m contract to automate the news

W. H. SMITH has gone to a Nottingham-based DEC systems house for a £2 million system to computerise its wholesale news division business in England and Wales. Computer Systems and Products will supply Smith with its Newskey software and 50 DEC Vax computers, ranging from the MicroVax to the Vax 750 in a contract spread over two years.

CSP has already sold its Newskey news distribution software to other wholesalers, including Strridge Dawson in a £700,000 contract.

Apollo for poly

TESSIDE Polytechnic has picked Apollo Computer UK to supply a networked system comprising 16 32-bit DN300 workstations, each with one Mbyte memory and 300 Mbyte disc storage, plus two DSP80 processors to control the local network. Installation will be late this year, and is to be ready for teaching 30 MSc students by January 1984.

OCR deal

SCAN OPTICS has installed the first three of five optical character reading systems in an order from Barclaycard worth about £2 million. The systems will be used to process Barclaycard sales vouchers, with a total throughput of over 500,000 documents a day when all five systems are running.

Council picks ICL

ICL has beaten IBM, NCR and CMC Microdata to a £205,000 local government order from Clackmannan District Council in Scotland. The order involves a M829 distributed mainframe computer, which will be linked to an IBM 3033 mainframe in Scotland's Central Regional Council headquarters in Stirling, for batch data transfer and interactive work via IBM's Systems Network Architecture.

Water network

DIGITAL Equipment's All-in-One office automation system, based on Vax minicomputers, continues to sell. Latest UK order, worth £800,000, is from the Yorkshire Water Authority, and includes a distributed network of four Vax 11/750s linked to a central ICL mainframe at the authority's Bradford headquarters for office automation, stock control, data retrieval and engineering applications.

Hoechst upgrade

HOECHST UK, subsidiary of the West German Hoechst chemical combine, is about to upgrade its IBM installation with a new 3083 mainframe, and is replacing its accounting software with a £97,000 package from Management Science America. The order includes MSA's general ledger package, which has more than 2,000 users worldwide, plus the Easy Screen generator, which allows users to design their own screen layouts.

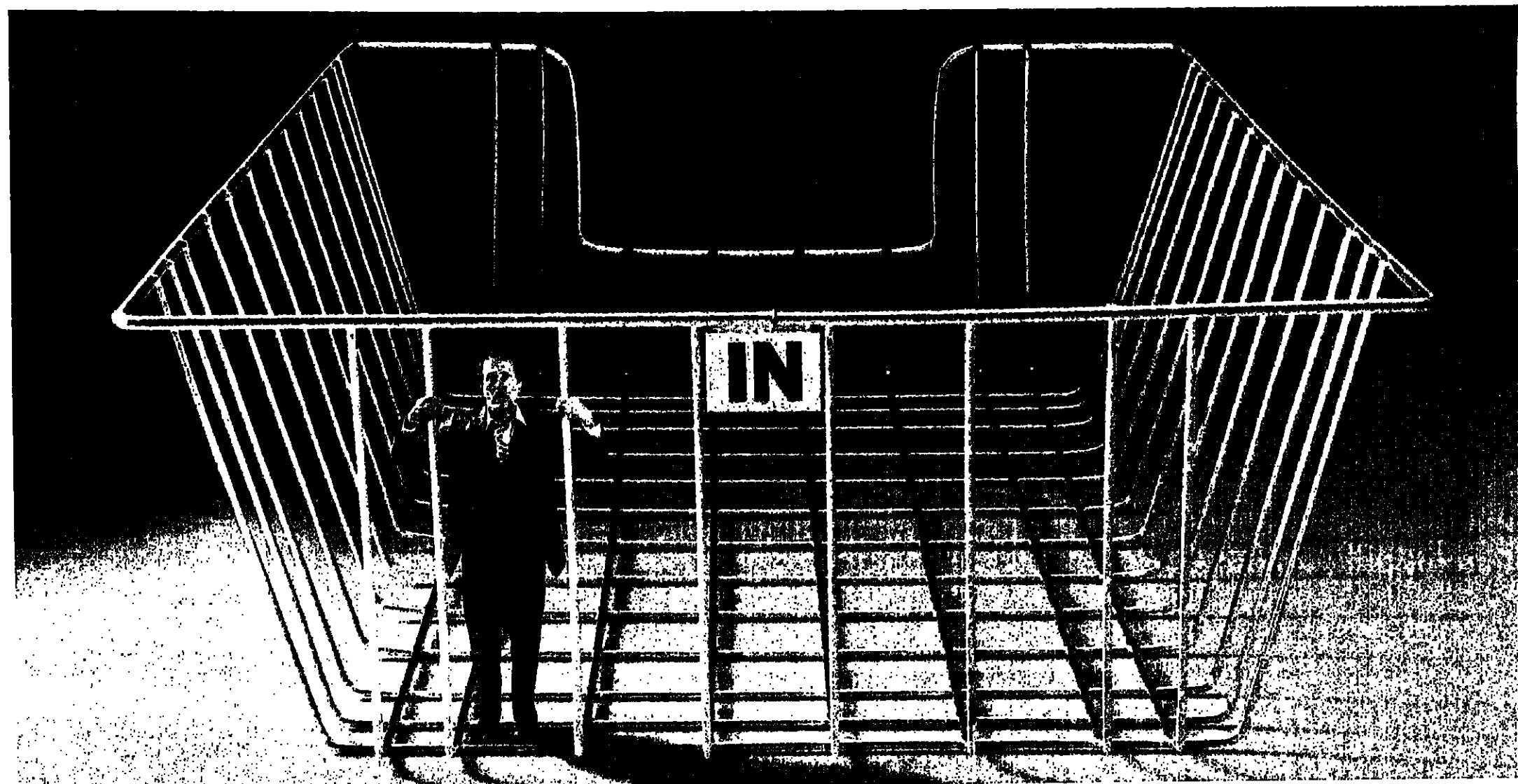
£500,000 testers

MARCONI Instruments is to export £500,000 worth of circuit testers to TRT, a major French telecommunications and electronic systems manufacturer. The order involves five System 80X testers to be used for testing printed circuit boards to be installed in military communication systems.

Paint training

INTERNATIONAL Paint, leading supplier of ship paint, has bought Icon's computer controlled interactive video training system, worth £13,000, for teaching staff about manufacturing, safety and management.

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Brunel and Metal Box unite for CAD/CAM

Brunel and Metal Box unite for CAD/CAM

by Keith Holder

BRUNEL University and the giant Metal Box, have joined hands for a major project to explore low cost computer aided design and manufacture (CAD/CAM) techniques for precision toolmaking.

The three year project is being funded, to the tune of £175,000, by the Teaching Company Scheme (TCS) which is backed by the Science and Engineering Research Council and the Department of Trade and Industry.

A spokesman for Metal Box says no one else is known to be involved in a similar project, and that the results could have a commercial value. No decision has been taken yet on how any commercially viable systems would be marketed, or how the profits from such a venture would be divided.

The project provides work for two researchers, who will be replacing a second pair next year, guided by Dr Tony Medland, Dr Glen Mullineux and Andrew Jones, all from the university's Design Applications Group.

Mullineux says that work was confined to looking at current working practices at present, but would progress to setting up equipment and applications test beds in about six months' time.

The university is interested in producing an effective CAD/CAM package that can run on microcomputers, which would have applications beyond the scope of Metal Box's requirements, Mullineux says.

This includes a feasibility project, already underway, to adapt the university's existing CAD/CAM techniques to run on conventional software packages.

For its part Metal Box hopes to end up with a tool making procedure in advance of anything available at the moment.

Victor falls and ACT is ready

by Dave Madden

VICTOR Technologies has finally been forced into bankruptcy after creditors filed a suit against the company last Friday. Applied Computer Techniques (ACT) is set to pick up the pieces.

Victor was in trouble throughout 1983, and has been running on a cash payment basis since the autumn. But although it has cut to the bone since last August it still reported a loss of \$36.9 million on revenues of \$46.1 million in the quarter to September. The company owes some \$90 million - \$30 million to Security Pacific Bank, the rest to 1,500 other creditors, including Tandon and Multiflex.

ACT directors, including Roger Foster, flew to California to negotiate manufacturing rights to Victor's products on Sunday. Peter Oldershaw, a director of the company, says: "Victor has been in this position for some time so we were well prepared and have good stock levels. But as far as ACT is concerned demand for the Sirius 1 has never been better and there are rich pickings to be had - this is an excellent opportunity for us to enhance our international activities."

Oldershaw says that the negotiations were at an advanced stage, but there were other companies taking a close look - including Swire Pacific and three major US corporations.

ACT has already done a trial

assembly run of 300 Sirius kits in its Glenrothes factory at the end of last year, showing it has the capability to put the machines together.

Meanwhile, ACT is spending £1 million expanding the Scottish plant, just three months after its opening. The new extension will add half as much space again, and boost production of ACT's homegrown Apricot micro to 100,000 units per year by June.

And the expansion is expected to bring in another 100 jobs, doubling the number of staff employed in the Glenrothes factory to around 200 by the end of the year.

The plant, set up specifically to build Apricot, was ACT's first venture into micro manufacture. It gleaned £6 million from a shares issue to do this, plus several million pounds from the then Department of Industry and the Scottish Office.

"The fact that we are already investing a further £1 million for expansion confirms the considerable success of Apricot - and of the plant," claims Chris Winn, managing director of ACT (Computers), the wing of the ACT group which looks after the Glenrothes factory.

The expansion of the plant will allow ACT to spare production capability for other products. At the moment orders for Apricot, launched last July with deliveries starting in the autumn, outstrip production rates.

US delays speed up Commodore in Europe

by Keith Holder

THE Commodore 264 computer, the company's bid to enter small business computer market, could be launched in Europe before it makes its US debut, according to UK marketing manager, John Baxter.

He says that rumours of delays, circulating in the US, are confined to that area alone and, if anything, plans to launch the computer here have been speeded up.

The problems in the US centre around getting approval from the Federal Authorities (FCC) for radio interference. This, says Baxter, means taking the computer into a remote area, like the Nevada desert, for testing, a process which can take time, and could hold up the computer's introduction.

Speculation that the company has not yet decided on the program package for the 264's in-built writing of financial software, or that the recent resignations of

four top executives would keep the machine under wraps, are dismissed as scaremongering by Baxter.

He says that any secrecy over the details of the machine is intentionally aimed at keeping competitors guessing. Price is also undecided, though US chairman, Irving Gould, says that the machine will be priced so that it doesn't hurt sales of the popular Commodore 64.

Although it is true that four of Commodore's top executives have quit in the wake of company founder Jack Tramiel's resignation, these were no surprise, says Baxter.

Don Richard, acting president of the company's US unit, was also Tramiel's personal assistant for several years, and was expected to go with his former boss, Baxter says, and the departure of Myrdin Jones, Bill Miller and Roy Thomas were all announced at the end of last year.

BT awaits customers for teletex link

by Philip Hunter

BRITISH Telecom's two latest text transmission services, teletex and the packet switched service (PSS), can now be linked together. "We are ready to go when the customer comes to us," confirms a BT spokesman.

But customers are not likely to come until the teletex service is also capable of being linked to BT's other text transmission service, telex, later this year.

This will be making the service available to the world's million telex users, 100,000 of which are in the UK.

Teletex is based on the public

Computers has won the initial £200,000 contract for hardware to control the switching.

The company will supply twin GEC 4000 computers and interface software to the first switching centres set up to handle connection between teletex and the public telephone network. More orders are likely to follow as teletex use expands.

But at present very few people have a teletex terminal in the UK, and conform to BT standards.

This is despite encouragement to UK manufacturers of teletex terminals from the Department of Trade and Industry, which set aside £4 million in March 1983 in



PALMER... Expects sustenance from his food industry experience.

Fearful trade bodies regroup

by John Riley

FEAR of getting cut out step with the rapid changes in the computer industry has prompted two industry trade associations to look hard at their roles and relevance.

Beta, the all-embracing Business Equipment Trade Association, which covers the whole office equipment industry from paper clips to mainframes, has called in consultancy firm Conifery to reassess its aims and direction.

Beta has also appointed Richard Palmer, former chairman of Associated Biscuits International as its director-general, and expects to draw on his extensive experience in foods industry trade associations.

Meanwhile the Peripheral Suppliers Association, which has increasingly found its identity becoming confused as microchips being used to drive peripherals, changed its name to The Computer and Peripherals Equipment Trade Association (Competa).

Both associations are determined to attract more members, want to be more effective lobbyists, especially to government, and want to promote standards and codes of practice, but are still unsure how to go about it.

"How do you define a peripheral?" asks Bob Britten, past

chairman of the association and sales and operations manager for US company Kennedy International.

"For example, take our latest group code recording tape system - that has the engine power of a couple of Vaxes. Defining peripherals suppliers is getting more difficult - wooliness pervades everything."

Ken Heather, the new chairman of Competa, and managing director of Fragma, says: "We decided to widen the association to invite companies with standalone systems that incorporate peripherals, and don't exclude big companies."

The question of identity and distinction between Competa and other associations is still unclear but, says Britten, "we don't want to be seen as a rival to the British Micro Manufacturers Group, but there are areas where we work together."

Similar problems are facing Beta. "We are assessing our role and taking a searching look at ourselves," says Andy Andrews, Beta's new president.

Both Andrews and Palmer expect to lobby government and the EEC on issues affecting the broad range of the office equipment industry.

Upset contractors slam wages con

by Philip Hunter

CONTRACT programmers sometimes have to complete a two week probationary period before their appointment is confirmed, but they are normally paid for the time spent on the job, even if their work is deemed unsatisfactory.

But two contractors were recently offered a six month contract only if they agreed to leave without collecting any pay if they failed to meet the required standard during the first two weeks.

One of the two contractors, who asked not to be named because it might affect his prospects of winning other contracts, said: "This sort of move is only likely to get people who are desperate for work."

But one managing director of one of the recruitment agencies trying to sell the contract to contractor programmers, defended the idea.

He said contractors were highly paid and most of them were aware

of the standards expected of them.

Clients naturally could not pay out for shoddy work. But the managing director, who, like the contractor, didn't want to be named, admitted that the controversial clause was not common in contracts. "Honestly, I can't see something like this becoming the norm."

He would not name the company offering the contract.

Other recruitment agencies agreed that contracts did not normally have this clause posing the threat of the sack without pay.

Roger Evans, a director of the VLI Group, said that occasionally contractors might be asked to work the first two weeks at a reduced rate if they lacked one of the skills specified in the contract. The idea was that the contractor would spend this time learning the skill.

But Evans said VLI would not expect contractors to work a two week probationary period with the threat of the sack without pay if they failed to come up to standard.

NatSemi could face criminal charges

by Keith Holder

US CHIP maker National Semiconductor could face criminal charges from the US Justice Department over faulty testing of components for defence and space organisations.

This is a result of a two year grand jury investigation following the company's admission that some 240,000 devices were shipped without receiving the full battery of tests required by Department of Defence specifications.

The company was disqualified as a supplier early in 1982, though this was rescinded after 10 weeks. Now it could be charged with fraudulent and inadequate test procedures.

Spokesman for NatSemi denied that there had been any new developments and said that an out of court settlement was still possible.

The company has also spent \$40 million in the last two years, improving its testing procedures.

Pat Brockett, NatSemi's North

European marketing director, says that any charges brought could only relate to the original incident. "We are continuing to sell in large volumes to defence contractors and organisations in both the US and Britain."

A US spokesman pointed out that NatSemi had "cooperated fully" with federal investigators and said that the company had given the government all information and materials requested.

The indictment is expected to cover not only testing in the US but also the company's programme at its Singapore facility.

Brockett says that whatever the effect of charges, they are not likely to affect the company's business.

NatSemi is currently experiencing a greater demand for its products than it can supply, in common with the other major chip manufacturers, and is planning to spend \$200 million on improving its production facilities, including expansion of its Greenock plant.



BROCKETT... Says any charges could only relate to the original incident.

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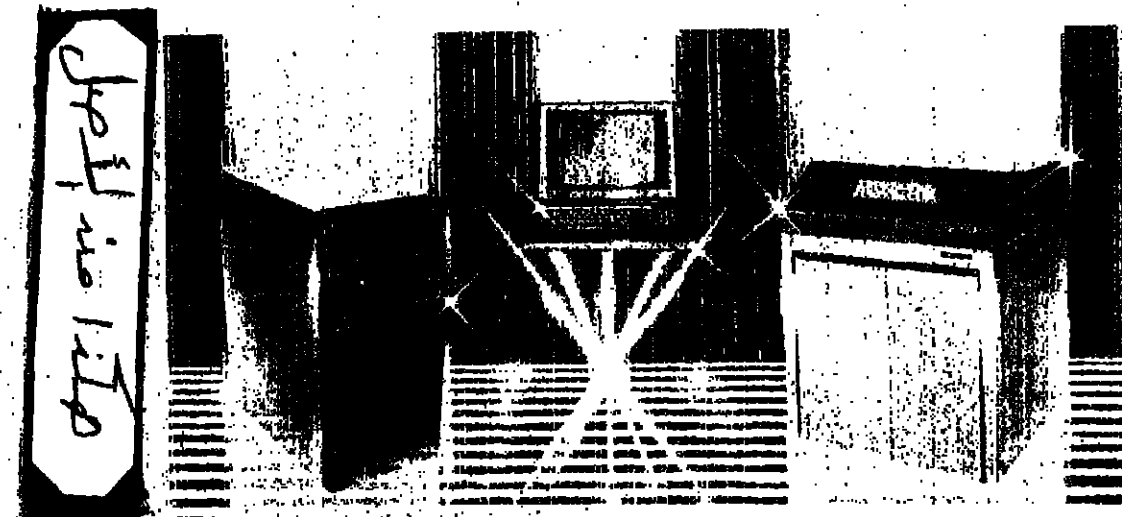
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HOUSTON... Discussions with international banks in London and New York, and with airlines.

Paradyne joins with the French

by Donald Kennett
US DATA communications company Paradyne has joined forces with French packet switch supplier SESA. The two have signed a manufacturing and marketing agreement and also agreed to collaborate on the development of future products.

Paradyne, much more internationally orientated than SESA, will manufacture and sell SESA packet switch products. The deal will extend Paradyne's ability to provide complete private data networks.

SESA supplied the switching equipment for France's Transpac public data network and for Brunet. It is also bidding for British Telecom's packet switch stream enhancement and renewal contract as well as the London Stock Exchange's integrated data network (IDN), which is to be the distribution medium for all its future electronic information services.

Paradyne European product marketing director David Houston says: "We think the market for this is very very strong in America,

with AT&T opening up. Europe is different but still significant. Private companies want their own networks to transpire what the PTTs are doing."

The agreement is exclusive for the US and Canada, and non-exclusive in Europe. Houston adds: "We believe we will be strongest in the market where private networks are crossing national boundaries. We are already having discussions with international banks based in London and New York and with airlines."

The company needed a packet network to fill out its range, he says, because a number of its present customers for modern, multiplexers and network management systems wanted packet networks and they preferred to get the lot from a single supplier.

A complete network would cost from £400,000 to £1 million, and consist of between three and 10 packet switching exchanges, each with up to 16 lines capable of carrying data at up to 14.4Kbits per second.

Apple hopes for pirate precedent

by Dave Madden

APPLE Computer has won what it hopes will prove a significant legal victory against software pirates in Taiwan.

Six Taiwanese computer makers have been convicted in Taipei of violating Apple software copyright. The defendants have each been sentenced to eight months in jail for copying Apple's Autostart and Applesoft Basic programs.

But Apple's legal department in Cupertino, California, is not sure if the convictions will stick. "This will be an important precedent if these people go to prison, but we've won verdicts before that have led to nothing," said a spokesman.

Apple is afraid that the district court decision will be turned over on appeal. The defendants claim that Taiwan's current copyright laws are ambiguous and cover "printed words" and not computer software.

In January, the company lodged an appeal against a decision by an Australian judge that computer

software was not covered by copyright law. Apple had alleged that products distributed in Australia by Computer Edge were illegally copied in Taiwan. The appeal is due to be heard in March.

Apple has brought copyright prosecutions in 30 countries. Last September, it won its biggest victory against Franklin Computer of New Jersey, which built an Apple-lookalike micro, the Pincapple.

Taiwan has come under increasing international pressure to be seen to be doing something about its computer piracy industry. Unconfirmed reports in a local Chinese language daily paper, *Commercial Times*, suggest that Taiwan's Ministry of Economic Affairs is set to outlaw domestic and export sales of Apple II copies, whether outright fakes or so-called Apple-compatible machines.

The irony of such a move would be that it is more likely to benefit IBM than Apple. The bottom has fallen out of the market for Apple fakes, and Taiwan's imitators are switching their attention to the IBM Personal Computer.

Modcomp quits HQ

by John Kavanagh

US minicomputer firm Modcomp is selling most of its new 93,000-square-foot European headquarters and factory at Wincoburn, near Reading, Berkshire.

As a result, Modcomp is selling or sub-letting four-fifths of the space at Wincoburn.

The Cork factory was opened in 1981. A year later, 16 of the 67 staff were sacked because of "the depressed state of the European market."

Another of Rogers' "tough decisions" involved the closure of a viewpoint bureau, set up at the end of 1980.

Meanwhile Modcomp's sales in Europe increased by 62% in 1983.

Siemens steps up research

by Dave Madden

SIEMENS AG, the West German electronics group, is making a belated effort to counter foreign competition by increasing its research and development investment.

Chairman Karlheinz Kaske says that Siemens will increase spending on capital projects by 20% to DM 30 billion in the next five years. Research and development spending will climb 9% to DM 3.8 billion in the current year.

Although Siemens has gone into partnership with ICL and Bull to form a joint European research institute in Munich to do basic research, the company has been criticised for its failure to react to US and Japanese competition.



The 1984 DP Olympics starts in Barnsley

by Andrew Thomas

IT'S Computastars time again. The DP Olympics are back, bigger and better than ever, with new events and the return of old favourites. Sponsored again by *Computer Weekly*, the UK competition kicks off in May at Barnsley.

This year there is an added attraction: the quest to find the fastest man and woman in data processing.

Other new events include a three-man (and three-woman) tug of war, which is aimed at inexperienced pullers.

Computing will be back for the real heavies, while more sedentary types will probably prefer the team darts.

The initial heat at Barnsley is followed by ones at Birmingham, Crawley and Enfield.

The UK final is at its usual venue, the Alexander Stadium in Birmingham.

The European final has yet to be decided, but it looks like a toss-up between Holland and Switzerland this year.

Full details, rules and an entry form will appear in next week's issue.

Don't miss it.

Dates and venues

Heat	
Barnsley	Saturday May 5
Birmingham	Sunday June 3
Crawley	Saturday June 9
Enfield	Saturday June 16
UK Final	
Birmingham	August 4

MPs have rethink on computers in court

by George Black

MPs are expected to take a radically simpler approach to the use of computers in court when a Commons committee debates the subject this month.

Home Office civil servants have had a change of heart after receiving a barrage of criticism of their plan to treat computers as "a special case".

Two crucial, if little-publicised, clauses in the Police and Criminal Evidence Bill are about to come before the select committee of the House of Commons. They will define the circumstances in which computer printouts can be accepted as evidence in court — a matter which the industry has wanted sorted out for several years.

The Home Office proposed a detailed ruling on what was different about computer evidence compared to that of a human witness. But leading academics and industry experts told officials that this approach could exclude many perfectly valid documents.

The clauses have not yet been re-written and the policy shift still requires the endorsement of top-level officials and Ministers. But government sources are now

talking of "taking a commonsense view", "not adding to the mystique" and avoiding an exhaustive definition of the machine and when they are working properly.

The indications are that they have heeded the argument of Professor John Smith of Nottingham University. He has warned that some evidence which would be unacceptable as hearsay might become acceptable as hearsay if processed by computer — a nonsensical result, according to Smith.

But Smith is optimistic that his view will prevail. "I feel fairly sure now that the new law will be changed to take account of what we have been telling them."

Another fear has been that complicated stipulations might serve as an escape clause for astute lawyers, to show that computer evidence is unreliable when other grounds of defence appear hopeless.

Interest in these two clauses in the Commons is likely to be small. MPs are likely to concentrate on the more sensational aspects of the Bill such as police powers. In the Lords, a number of lawyers may scrutinise the wording.

But few expect any obstacle to the law being passed.



BROWN... "More than just protocol conversations."

New Yorkers want to end mute micros

by Keith Holder

A SUCCESSFUL US package, designed to link personal computers to IBM mainframes, has been launched in the UK.

New York-based Techland Systems has set up a subsidiary in Britain, which will market and support its Blue Lynx synchronous communications range.

This uses a combination of hardware and software for terminal emulation and can be used to link the IBM-PC and XT, or plug-compatible microcomputers with any IBM mainframe, from the System 34 up to the 308X series.

Over 5,000 packages have been sold in the US in the past 18 months, some to IBM itself, says Harris Landgarten, president of the US company.

He says that company research had revealed that 70% of all IBM-PC and XT systems bought for business use would be used for micro-to-micro or micro-to-mainframe communications, and adds: "Dumb terminals and mute micros will become a thing of the past."

He goes on to say that it is easy to show users that using a personal computer, instead of a remote terminal, can be cheaper and more

cost-effective.

Nigel Brown, managing director of the new subsidiary, thinks that this figure will hold true for European users, too.

He says that Blue Lynx has scored over its rivals by offering more than just protocol conversions, and supports full file handling functions.

Personal computer communication with IBM System 34-38 mainframes, is accomplished by emulation of IBM's 5251 terminal.

The 5251 package does not have file handling capability, but it can be provided by an optional add-on which plugs into the mainframe.

For larger systems, emulation of the IBM 3270 terminal — which does support file handling — is used.

Files can be transferred to a hard disc, attached to a PCXT from the mainframe, says Brown, as the mainframe treats the disc as a second printer.

Blue Lynx costs £560, though users wanting file transfer on the System 34-38 will have to spend up to £760, for add-ons.

Other options in the Blue Lynx package are business software packages, modems, printer support and line drivers.

DEC £16m French factory will create 300 jobs

by Jack Gee

DIGITAL EQUIPMENT is to invest FF£200 million (£16 million) in a new factory at Valbonne on the French Riviera where it will manufacture a wide range of equipment and provide 300 jobs almost right away, European vice-president Jean-Claude Peterschmitt has announced.

The product range will include Vax and Vax Plus and a vast new

range of peripherals. A design centre is being opened on the factory site where research is likely to be done on the new super mainframe being developed by Trilogi, in which Digital Equipment has a 9% stake.

The corporation's vice-president, Pier-Carlo Farloti, says: "By producing here such high level machines as the latest Vax models, we hope that the French

market will open up for us."

Digital Research recently inaugurated its second European remote diagnosis centre for computer breakdowns in Valbonne, following the first centre already operating in Britain. The Valbonne diagnosis centre will handle 3,500 major clients in Western Europe.

French government approval for Digital Equipment's new invest-

ment programme is still awaited. But agreement is taken for granted because negotiations, which had been under way for several years, have been progressing fast in recent months.

Digital Equipment France, which has a staff of 1,500 people, now accounts for 15% of the group's activity in Europe, where it has risen from number five to number two in the DEC league.

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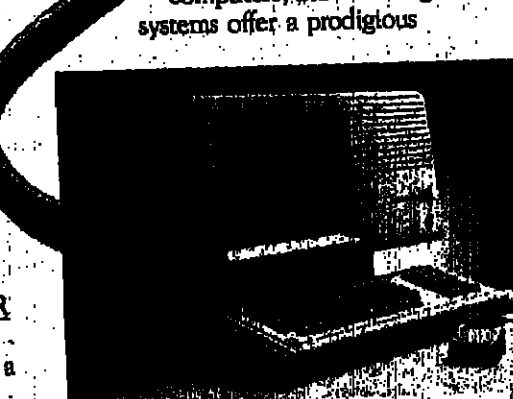
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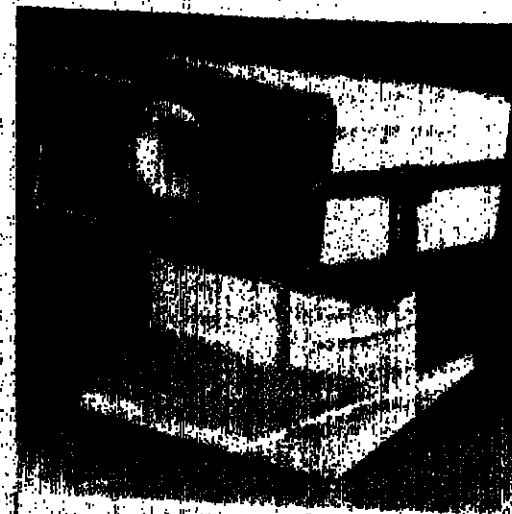
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SOFTWARE FILE

Weapons spread in pirate war

NEW weapons in the war against the software pirates are emerging from such unlikely origins as Tel Aviv and Chippenham.

The Israeli method comes from Adi Shamir, mathematics professor at the Weizmann Institute. He has designed a disc drive that produces pulses when running a program, which cannot be reproduced when copying it on a home computer. He has coupled this with a technique for making the user's disc drive cancel in-built pulses at each run, so the number of runs can be controlled.

The snag is that Shamir's invention, announced last autumn, has to fight its way out of academia through the national bureaucracy

and into the marketplace. He is getting together with Ami Herzberg of Technion, an Israeli software house also researching the problem of piracy, to look for effective international marketing channels.

Hele Winer, director of the country's software exports, says: "We have a lot of innovative talent and all it needs is for the right big company to show our experts how to sell their ideas."

Israel's "Silicon Desert" now has 80 firms, including several that specialise in piracy solutions, such as S3 and Defendisk.

Meanwhile, back in Wiltshire, Keith West of Parwest claims to be ahead of the Israelis with a wholly



WINER... "All we need is the right big company to show our experts how to sell their ideas."

software solution to the problem.

"The program prevents a user from running it if he is not authorised to do so. We've had it going for a year and challenged people to crack it and they have failed," he says.

Having overcome the fear of piracy, he says the way is now open for software rentals to take off. He

is trying to set up a network of 300 dealers nationwide to rent programs by the month.

"It's the same approach as video," he says. "Many people have been scared to commit themselves to buying at a high cost when they didn't know what it was all about. Now they can return it if they don't like it."

The battle for reform of the copyright law goes on. The Federation Against Software Theft (FAST), including IBM, ICL, DEC and the British Computer Society, meets at the end of this month. It will debate a proposal to back a Private Member's Bill which would ensure that software is covered under the law.

Shopping over the terminal arrives

by Claire Gooding
SOFTWARE shoppers in Britain will be able to buy games and other products "over the terminal" this spring in an experiment that could revolutionise software distribution. W. H. Smith, Rumbelow and Dixons are among retailers at present discussing the electronic distribution scheme with UK firm Prism.

Prism signed with Romox, the New York originator of the technique, last July. It is now setting up a pilot scheme, which will bring the UK in line with the US and Europe, where the system is already up and running.

In Paris, Communication Telematique is already using the Romox special cartridges and terminals to send software down the line to terminals in 20 large department stores. There is also a pilot scheme being conducted by Oy Teledata in Scandinavia, including computer stores, video shops and TV chain, planned to expand to 100 terminals by the end of the year.

All the terminals in the UK and Europe will connect with Romox's central mainframe in California, which provides a pool of games and other products. These can be browsed through in menu form, and when the buyer has made a choice, the software is then written to a special cartridge.

The Romox cartridge carries an EPROM (erasable programmable read only memory), which can be re-programmed in minutes without being removed from the cartridge.

Romox is applying to patent the technique, which, according to Prism Software Products managing director Steve Wood, holds many benefits for both buyer and retailer. "The whole value is that buyers can get new software immediately - it only has to be loaded overnight, and there is none of the delay involved in packaging and duplication."

As well as the immediacy for the buyers, the quicker "life cycle" for products will benefit software houses, claims Wood. "As well as immediate distribution, there is less of a copyright problem. I envisage volume sales - that is, the bulk of sales for new products - made through the cassette will follow."

Once a buyer has bought one of the EPROM cartridges, it can be re-programmed again and again as new products come in. In the US Romox charges between \$15 and \$25 for the cartridges, with software costs for individual products ranging between \$6 and \$25.

In the UK Wood is still negotiating with software houses for distribution rights, but hopes to woo them into committing their new titles exclusively to the Prism experiment. "The success of the system depends on the price and the quality of the software we offer. I will be using some stuff from the US, but not all."

Wood has already reached agreement with two British software houses. W. H. Smith is more cautious, but nevertheless very interested in the Romox technique. "It's all a bit speculative. We've expressed an interest," says national merchandise controller Stewart Bishop.

"The implications are profound for the industry - we may finish up retailing in a totally different way."

LOGICA's relational database, Rappport, has gained more support this time from GEC Computers. GEC has signed with Logica to market and support Rappport. The database already runs on the GEC 4090 and 4100 series of machines.

SOFTWARE FILE

UK could miss the Ada boat

BRITAIN is in danger of missing the Ada boat unless the government gives strong signs of its commitment to the language.

This is the view of Rohn vice-president Dennis Paboojian, who is currently touring Europe to promote his firm's compiler. He says he has found far more sense of purpose concerning Ada in France, Germany and even Italy and Spain. He criticises British software houses, which still seem confused over the government's attitude to real time languages and therefore stuck to either Coral for military use or Pascal for civilian use.

Rohn's compiler, jointly developed with Data General, became the first to be validated by

the US Defence Department (DoD) last summer. It has since been followed by the Western Digital compiler and the New York University interpreter.

Paboojian's remarks come as the British government's £9 million MCHAPSE scheme remains tangled up in negotiations by its sponsors. The scheme collapsed last year when British Telecom pulled out of the deal and opted to carry on its research into Chill separately. The Ada Group - a consortium led by ICL - is struggling to resurrect the Ada half of the venture, but talks on who pays for what are still deadlocked.

Paboojian's aim is visiting potential clients, such as Westland Helicopters at Yeovil and the De-



PABOOJIAN... "It seems to be only in Britain that there is scepticism about Ada."

fence Ministry's RSRE division at Malvern, is to ally British fears that Ada "might not happen after all".

He points to clear directives issued by US Defence Department under-secretary Richard Delauer in June and December of last year, laying down the timetable for adopting Ada. From January 1984 advanced development would be

in Ada and from July 1984 all full-scale engineering development.

Paboojian sees no possibility that it will retract those statements or grant wholesale waivers to software writers. "Ada has hit all the milestones that the DoD has set for it, whatever the problems encountered by Softech or Intermetrics," says Paboojian.

"There is no scepticism about Ada in the US any more. It seems to be only in Britain that there is."

Britain's lack of initiative is reflected in the small number of people now working in the Ada area, he says. He thinks there are not more than a few dozen capable Ada engineers in the UK, whereas the US figure is already well over the 500 mark.

IBM DMS package is rated a turkey

NEARLY one third of users of IBM's DMS package feel they have not gained any benefits from it, according to a survey by IBM watcher, Xephon. One user even told the Berkshire consultancy the DMS is "a turkey".

Xephon asked over 200 US users for their views of six popular applications generations, Cincom's Mantis comes top on overall satisfaction and also scores the highest marks for reliability and value for money. Runner-up is Information Builders' Focus, praised for ease of installation and use.

Cullinet's ADS-Online, IBM's ADF and Oxford Software's UFO come in the middle bracket. ADF scores well for reliability, which is just as well, as its vendor support and training are criticised. Both IBM products, ADF and DMS, come off worse than all the independent rivals.

DMS is the only package to be called poor value for money, though Focus shows up poorly in documentation and vendor support.

Expert pleads case for safety control

INDUSTRY is not interested in the risks of using software to control safety, an expert has complained.

It only pays lip service to the problem, says Phil Bennett, former computer manager for the British Steel Corporation and an adviser to the US Defence Department on the Ada language.

Bennett told a meeting of the Institution of Electrical and Electronics Incorporated Engineers that there was a need for fundamental research into the use of software as a control element. He hoped the Alvey Programme would contribute to this and not concentrate solely on new tools and environments.

Bennett defended Ada against criticisms of the language made by Professor Tony Hoare of Oxford University. Research had shown that strongly-typed languages, such as Coral, RTL2 and Ada, limited the scope of errors and reduced fallibility.

In an implicit criticism of the Alvey approach, he cast doubt on the value of formal specifications.

"They have their place," he told the meeting, "but if the plant manager can't understand what is required, how good are they?"

A new report just published by Basil and Perricane finds that 48% of errors detected in two systems - one on an IBM 360 and the other on a DEC PDP10 - are due to specification problems.

"That just shows we aren't getting any better," commented Bennett.

Barry Daniels, a senior engineer at the National Centre of Systems Reliability, regretted that software was still not amenable to quantitative assessment. But he added that the centre hoped to be able to extend the use of quantification in risk evaluation on the basis of current research.

Ron Bell of the Factory Inspectorate said in one case a software fault had led to a "very serious explosion indeed" at a major company in this country. A programme change crept in undetected while the systems team was working flat out and under pressure.

Concurrent CP/M sweetens the Apricot

by Claire Gooding
PRODUCTIVITY improvements of 30% and upwards for users are claimed for the first applications to appear on the Apricot under the Concurrent CP/M package. The packages are being launched by London software house Graffcom at the London show devoted to ACT's Sirius and Apricot machines this week.

According to Robert Owen, managing director of Graffcom, the packages are the first Apricot applications available under Digital Research's multi-tasking single-user operating system.

"These packages are very new. They've only been available on the Apricot for two or three weeks and as far as we know they are the first Concurrent CP/M packages."

"We're expecting to run a promotional deal with discounts of 30% or so for contracts signed at the show," he says.

Software File is compiled by George Black



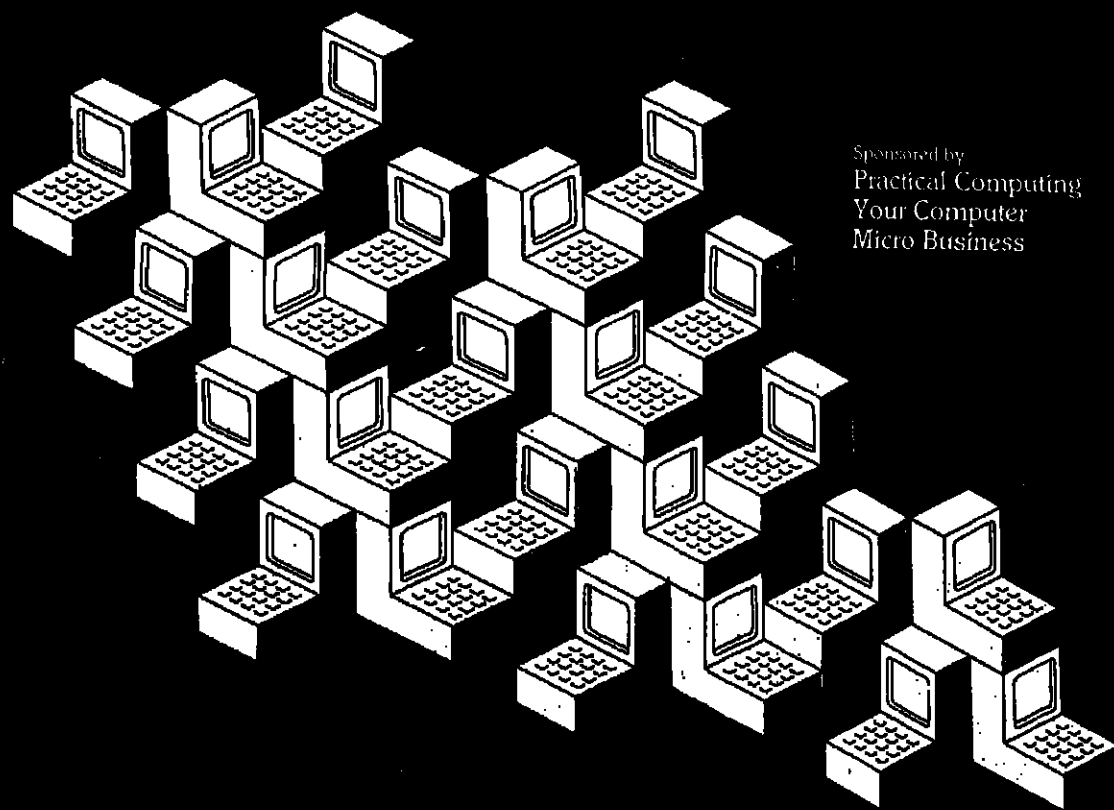
OWEN... "Excellent results."

The packages are Graffcom's staple product, the ISBS/F range of financial modules, normally priced at £220 each on the IBM XT, the WP2020 word processing package, and the newest Graffcom product, the Omnia suite of integrated office software. All three have been designed and written in-house by Graffcom.

"We're pushing Concurrent CP/M as the ideal environment for running business applications," says Owen. "We've had excellent results ourselves and believe that Concurrent offers vast improvements for the single user."

"You get better continuity of work," he adds.

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DUNLOP... "Expertise."

Sphinx is set to supply part owner Olivetti

SPHINX, the Maidenhead distributor of Unix applications packages, has agreed to supply its part owner, Olivetti, but has turned down the chance to get further into bed with the Italian company.

Bosses of the two companies met last week, but Sphinx rejected the overtures of Olivetti for a closer relationship for fear of prejudicing its deals with other hardware makers, including NCR, Plexus, Allos and Fortune.

Olivetti, quarter-owner of Sphinx, is now one-quarter owned by AT&T, the originator of the Unix operating system, through its Bell Labs subsidiary. But Sphinx co-founder Dominic Dunlop says there is no likelihood of their working directly for the recently "divested" US telecoms giant.

"Olivetti has a large hardware manufacturing capacity and a lot of marketing outlets, but what it does not have is expertise in Unix packages. It only has facilities for custom-building Unix for its large clients," says Dunlop. "What Sphinx will do is to supply the package expertise for Olivetti to utilise."

But Sphinx does not want to enter into any long-term research and development collaboration with Olivetti. In case it sacrifices its current customers to other hardware firms, he says. Nor will Sphinx sell any Unix-based hardware.

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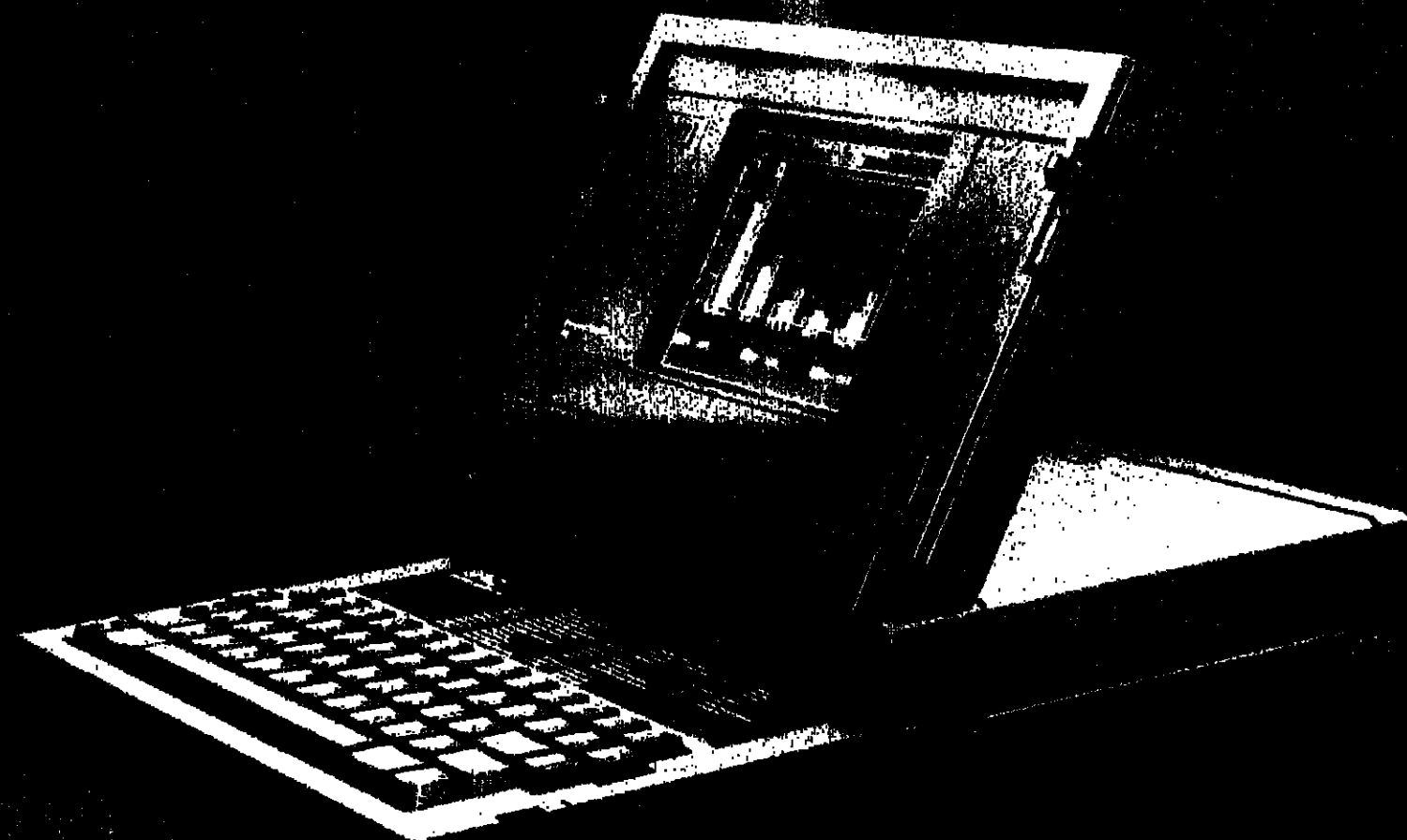


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Although weighing only 10 lbs, the Grid is far from light on power. There's 512KB of RAM. Another 384KB, a whole double-sided diskworth, of bubble memory.

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But as you might expect, there's a price to be paid for such an exceptional machine. Should you have an ordinary desk job, your company may well decide it's unaffordable.

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MICRO NEWS

Chip will set up open networks to link micros

NINE TILES, the company that developed the operating system for Sinclair's ZX81 and Spectrum, has launched an interface chip for creating open networks between micros.

The LSI interface chip is now available for Epson QX10, Apple II and IIE, BBC micro, S100 and DEC Unibus systems, and director Dr Kate Grant says others will follow.

There is also a multi-link node chipset for manufacturers to incorporate networking into their products.

Grant says this is the cheapest open networking device available. The BBC version, for example, has an end user price of £99, about £45 for volume orders.

The chipsets will be built under licence by Hawker Siddley. Support software, including CP/Net implementation and a network filing system, is available.

Grant says networks using a mixture of micros is not only possible, but has distinct advantages for users.



HOLWAY... Top priority.

Scientists work on miniature micro

by Philip Hunter

A POCKET computer little bigger than a credit card is being developed at the National Physical Laboratory in the hope of breaking into the French-dominated smart card market.

The idea is to produce an intelligent memory card for widespread public use in paying for retail goods, unlocking security doors, and buying time on cable television.

Unlike other smart cards being developed, NPL will carry a small keyboard.

The product is at the planning stage and will not be ready for market until 1986, according to Peter Hawkes of NPL's electronics and information technology division.

But when it arrives it will be sweetened for public use by having all the functions of a powerful pocket calculator.

It will also need to cost under £10 if the public is to buy it. Hawkes adds, "Then it should have a chance of becoming widely-accepted for cashless transactions, although NPL points out that there will be competition."

The French government is investing heavily in intelligent memory cards from Bull and Philips, and Japanese and US companies are starting to get work un-

der way. Hawkes says a prototype could be ready this year, embodying all the functions of the final product. But the prototype would be bigger than the final product because it will not be possible to put all the functions into a device the size of a credit card until further developments in VLSI technology.

One particular reason for needing advances in VLSI is that the NPL wants to apply the so-called public key encryption system for the generation of digital signatures to make the device secure for point-of-sale and security applications. The programs needed to achieve this are still much too big for any current memory card.

Hawkes hopes something useful will quickly come out of the Alvey programme, and suggests Alvey might take over part of the NPL project.

The new microcomputer will have a non-volatile memory so that it can work in offline as well as online mode.

At present the project is part of a larger programme on automatic transaction, by the Tokens and Transaction Control Consortium. The 15 members of this consortium include British Telecom, Abbey National Building Society, Ferranti, CAP, ICL, GEC and the Post Office.

Toshiba is close to chip goal

THE next generation of gallium arsenide (GaAs) "super chips" is a step closer, claims Toshiba, following its development of low defect level wafers.

By combining a vertical heating system and computer controlled pulling with the liquid encapsulated Czochralski (LEC) method, the company claims to have produced a GaAs wafer with the world's lowest dislocation density level of 10^3 per cm².

Phil Pittman, Toshiba's UK general manager, says this will increase the yield of finished chips and allow more sophisticated circuits to be used. These devices will be important in the future, he says, as the basis for the so-called super computers, as they offer higher speeds and a lower power consumption than conventional silicon devices.



PITMAN... Higher speeds.

Hoskyns goes for big user gold

by Keith Holder

HOSKYNs, the London systems house which specialises in serving the Times top 1,000 companies, is offering a new microcomputer service.

From this month, the company will run a "Gold service" package for corporate users of micro systems. It will include price discount, service and software packages.

Hoskyns has increased the number of micros that can be bought directly, and now offers IBM's PC, PC/XT and XT/370, Digital's Rainbow, the Hewlett-Packard HP150 and Apple's Lisa.

This year should also see the addition of Apple's Macintosh and IBM's PCjr (Junior), says marketing director Richard Holway.

"The Macintosh promises good communications with IBM PC networks," he adds.

But Holway admits that IBM has not yet announced any plans to

bring the PCjr to the UK and there is some speculation it might decide against this.

Hoskyns also offers a package of peripherals, including add-on memory and printers.

"Large companies have already discovered the benefits of dealing with a single source of supply," says Holway, "and we can go further by offering a tailored package of support, training and seminars to keep our users well informed."

Along with the hardware the company will market Mathematica's IT series of software, which Holway describes as "the first truly integrated range of personal computer software, specifically designed for the corporate user."

"The heart of this is KeepIT, a menu-driven relational database, to which can be added products like Lotus 1-2-3, Spellbinder and a series of IT packages which cover mainframe linking, multiple

window file editor, with mouse support, 16 colour graphics and electronic mail.

Mathematica was one of the first companies to talk about developing systems to exploit "user power" and has already produced Kamis II, which has enjoyed massive worldwide sales.

"Taken together, the IT series gives users the communications facilities they really want," says Holway.

"I firmly believe that communications is the number one priority for all corporate users."

The IT packages are ready to run on the IBM-PC and XT, and will soon be available for DEC and Hewlett-Packard machines, says Holway.

KeepIT will sell for £300, and the other packages range from £80 to £240.

The company is providing on-site service and support for all machines and peripherals sold.

Boston tool adds more to DEC's Professional

by Keith Holder

SOFTWARE tools to turn Digital Equipment's Professional microcomputer into a low-cost microprocessor development system have been launched in the UK.

Software Sciences will act as distributor for this latest development from US-based Boston Systems Office.

Vaughn Orchard, product manager for Software Sciences, says: "With prices starting at £5,000, it is the lowest-priced universal development system available."

The software includes assemblers, symbolic debuggers and utilities for the Professional 350, using the P/OS operating system.

Processors supported by the system include Intel's 8086/87/88, 80186 and 8085, with National Semiconductor's NSC800.

Software Sciences also distributes BOS products enabling use of the Professional as a workstation to Vax and PDP-11 systems.

Hoskyns...



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MARTIN MARITTA
Data Management Systems

PLATFORM

Why a standard Cobol is vital

COBOL evolved in the early 1960s under the guidance of the US Defence Department, whose purchasing policy greatly influences the direction of the major computer manufacturers' efforts in the development of languages.

The majority of the work of maintaining and developing the standard definition for Cobol still takes place in the US and Canada. There is some contribution from the rest of the world in setting the Cobol language standard, as most

rities, or having similar needs, such as financial planning, it has become practical to acquire packages to carry out the required applications.

Such acquisitions eventually reduce coding commitments by one site; they also reduce considerably their future maintenance requirements. Clearly the availability of packages in a standard language would enhance their attractions.

An eventual benefit is that systems and programming staff will have more time to spend with their individual applications users, whether they are other departments in the same company, or customers of their bureau.

At first, I did not realise the whole process for creating and controlling the Cobol standard was so convoluted

commercial programming, in both installations and software houses, is carried out still in Cobol.

Leaving aside James Martin's fundamental questioning of the need for Cobol, why do we need a standard for Cobol? I work in what might be considered a medium-sized site. It uses a Sperry 1100/61 processor with a special Cobol accelerator and has invested in the region of 200 man-years in Cobol programming, comprising approximately 2,500,000 lines of code currently in use.

That investment is neither lightly discarded nor easily converted to a new manufacturer's dialect of Cobol (estimates vary from 20 to 50 man-years to carry out such a task). In addition, it has become important to the site's medium- to long-term planning to avoid being locked into a specific supplier.

To ensure that this aim is met, our library of programs must become truly portable between any number of systems and compilers. There remains the long-standing problem of the different internal codes and file structures of different computer systems but that can be more easily over come if they all speak the same language.

With the emergence of network and OSI (open systems interconnect) standards there is hope that a code structure such as ISO ASCII will become a recognised interchange standard.

We can give the setting of an interchange code standard a definite prod in the right direction if we present a strong, united front on the whole issue of standardisation.

A prime reason for needing a standard Cobol language definition is that for organisations operating in similar areas such as local author-

ities, it will be possible to adopt proper programming methodologies which themselves eventually become standard techniques. The benefits are universal in that better programs are created, there is less maintenance commitment, and consequently more time is available for us all to catch up with those seemingly inexhaustible backlogs of development requests.

Inevitably, there would be greater programmer mobility, but this would be compensated by the swifter integration of new staff due to the standardised training methods facilitated by standard Cobol. If there is little willingness currently to be involved in the standard-making process, then computer management can hardly beom the current difficulties of recruiting trained, effective programmers when many of their installations are unwilling or are unable to do their own training.

Since the end of 1981, I have been a member of the British Standard Institution's (BSI) ad hoc Cobol working party, WG3, and in June 1983, I was invited to join the NCC's Cobol Standards Group. Why did I become involved? I

have a personal and professional interest, but more importantly, I am unwilling to leave it to someone else!

At first, I did not realise the whole process for creating and controlling the Cobol standard was so convoluted. I have suffered many frustrations in attempting to obtain the implementation of relatively minor change to the STOP RUN verb. Codasyl, the committee that vets and ratifies actual syntax changes, has altered the format of my change several times since it was first submitted to them.

I now realise that it may be as long as 10 years' time before this alteration appears in a Cobol standard. I appreciate that my own proposal has run into difficulty because it is simple in its own right, but has a potentially significant effect on other language features.

I now think that, in general, the processing of Cobol language modifications is grinding to a halt

be by actual involvement in committees and other meetings, but by merely exerting pressure for the formation of a specialist group, such as a computer standards board.

The achievement of a satisfactory Cobol language standard would be its primary objective, but it would be a forum for widening the standard setting process. Several groups exist at the moment that influence standards in the computing industry, such as European Computer Manufacturers' Association and the International Standards Organisation.

What I seek is a group that recognises and represents the needs of the computer application system developers. The aims of this group would be more easily identified with those of the NCC, whose current Cobol Standards Group could form the basis of the new standards board.

It must not be dominated by any particular group but represent the

turers and suppliers of software from imposing their own ideas on Cobol language development.

Many good new features that are being introduced into the Cobol language, such as screen management, validate and update and analyse, were developed in UK working groups, and the American-based committees are eager to encourage European-based users, especially those from the UK, to participate in the relevant standards processing groups (not just Cobol).

Perhaps, more importantly, we can express through a strong standards board the widely held view that the whole process can be greatly improved. Opinion in the UK is swinging very much in favour of introducing a modular technique for releasing new standard Cobol features.

In this way, we could see the above new features appearing as new standard modules as early as 1984, instead of expecting to wait until at least 1990.

We must be prepared to take an active role. True, the various standards committees have always ensured that everyone's voice is heard, but the time has come to put an end to the continual procrastination that has held up the new Cobol standard for at least five years.

If the speed of releasing new Cobol standards is not accelerated dramatically, our end-users are going to force us to reconsider our current systems development procedures by insisting that we install application programming tools that by-pass good, well-established programming practices.

The end-users see these tools providing them with working applications in amazingly short time scales. Use of these application tools is very much in the manufacturers' interests as they generally create greater hardware and software sales to support the vast overheads which can be incurred due to the nature of their file management routines.

There are well-documented cases of end-users developing the majority of their own online applications leaving the tedium of traditional batch systems to the data processing department.

The data processing department has to be able to take advantage of a properly established, standardised Cobol language, and the portability that follows from it.

End-user-orientated application development tools are waiting to fill the gaps left by poor quality systems running on inappropriate systems. If our data processing departments continue to ignore the



Douglas Atkins is technical and research manager in the computer unit of Leicestershire County Council.

problem, we have only ourselves to blame.

With complex terminal networks having the capability of giving most end-users instant access to the wealth of data we have spent years accumulating, we cannot delay application demands with excuses about insufficient trained staff and lack of programming standards. The end-user just does not want to know!

If we exaggerate the difficulties of program portability and hardware incompatibility to them they are going to question the need for trained, professional data processing departments.

The data processing department has to be able to take advantage of a properly established, standardised Cobol language

I am not advocating any form of reactionary protectionism as my own site is evaluating one of the advanced application development aids. I am convinced that the great deal of manpower we are and many others have invested in developing effective systems using Cobol is not lightly discarded.

I also want to continue being involved in running an harmonious, centrally co-ordinated service to a large and diverse user community that is able to consider each problem on its own merits and provide the solution.

I am arguing for a reconsideration of existing attitudes so that we can begin sorting out the particular problems associated with developing our major programming tool, the Cobol language, and thereby create the proper mechanism for computer installations' involvement in the processing of their programming standards.

Douglas Atkins

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, February 9, 1984

Government looks to the short term

"LOOK to the long term" is a good bit of advice which is seldom heeded. The problem of trading short term gain against long term stability is a dilemma which faces senior managers in many companies. Investors and shareholders are often impatient. Managers are encouraged to postpone difficult decisions. They are not unhappy to acquiesce in the knowledge that someone else is likely to be at the helm by the time the effects of their decisions are apparent.

One of the hallmarks of the present government is that it is going for the long term. Early in the Prime Minister's first term she stated that it would take another five years of office if her policies were to succeed. The times are hard now, she would say, but only by making these tough decisions can Britain's future be ensured.

So it is all the more surprising that the government has apparently chosen the short term solution in trying to bring down the numbers on the unemployment register.

Last year a proposal was put before the Manpower Services Commission to spend some £300 million on training unemployed youngsters for jobs in information technology. The money would have come from funds allocated to the Youth Training Scheme. The National Computing Centre, which formulated the scheme, estimates that over 350,000 young people could have found jobs in data processing. The Cabinet, we understand, approved the scheme.

In the autumn of last year, however, the plan was scrapped. The £300 million earmarked for the scheme could potentially create many more "jobs" for people with lower level skills. That is, £300 million expended on low level training takes a lot more people off the unemployment register than £300 million spent on high level training.

High level training costs more and takes more time, and therefore you can train fewer people with the same money.

One of the criticisms of YTS was that it was merely a cosmetic exercise to take young people off the unemployment register and put them on training schemes which offered no long term prospect of a job. The NCC scheme promised to avoid that trap, but its success was not guaranteed to be quite so instant.

A White Paper published last week says that the MSC is expected to give "priority to newly emerging skills, such as electronics and robotics". That is a noble aim. There must be some doubt, however, about the government's real commitment to such priorities in the light of its track record on training.

Industry has its part to play in training, and its own track record is not outstanding. During the recession most companies were content to let their training programmes fall into disuse, even though they were aware that the first glimmer of better times would expose severe shortages of skilled data processing staff.

They are justified, however, in looking for a lead from government - for evidence of a well thought out and constant strategy.

One senior industry spokesman, who has regular dealings with the civil servants responsible for information technology, said after a recent rash of job changes in the Civil Service: "It's just the old shuffling of the pack: they don't like bureaucrats getting too familiar with industry people".

Hugh Sharpe, who headed the computer training division of MSC, was moved after only one year in office. George Tolley, who set up Open Tech, an Open University type of scheme for technical skills, was replaced before he had been in the job for a year. And recently the old shuffle took place at the Trade and Industry Department: Alistair McDonald, head of the Information Technology Division, off to become head of telecommunications; Jonathan Solomon goes from telecommunications to education; Jack Leeming goes from there to the Space, Post Office, and Film Division.

And so it goes. Such changes do not make for long term commitments or constancy.

When the government completes its current term of office - banana skins permitting - it will have been in office for nearly 10 years.

That could be just long enough for the effects of short term solutions to come home to roost.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by Keith Appleyard of Coventry, who wins £5.

British Telecom is investing £250 million in the exchanges which electronically send speech 64,000 times a second and improves its quality.

LETTERS

Micronet adventures

READERS may be interested to hear of my experiences as a "Micronetter 800". Last November I ordered a Micronet Prestel interface for my Apple II which I was advised would be delivered within 28 days.

After six weeks' delay I received a letter stating that there had been a delay on the Prism 2000 modem I had ordered and that I should receive the kit within the next 14 days. The interface duly arrived on December 14, with no documentation relating to the modem.

I sat down with due trepidation for my first link-up with Prestel. After making 15 phone calls and "timing-out" each time, I deduced with my in-built intuition for solving hardware problems that there was something wrong! This was confirmed by Micronet who advised me that the modem I had ordered was incompatible with the Apple, even though there was nothing stated on the order-form.

I duly returned the modem and a new interface was sent last week after several phone calls to Micronet to find out what was going on. Again I sat down to marvel at the wonders of colourful Prestel pages and, horror of horrors, it was in black and white despite my having purchased a colour card and getting a special cable made up (outlay £140).

I then decided to adventure further and try the remote-link facility which allows users to link up directly using the Micronet modem. On phoning Micronet "technical support" department I was informed that as their Apple had been down for several weeks, they had been unable to test out this facility, and I was advised to Mailbox Y2 who developed the Micronet interface for the Apple.

The trouble with Mailbox is that it is like an answering machine. If Y2 decides not to reply I'm stuck up the creek without a paddle.

However, the link-up with Prestel works very well and I'm enjoying using the Micronet service despite the 90-minute phone calls.

NIEL WOODNICK
Simcon Computer Systems
Kenton, Middlesex.

Tandem achievement

WHY so few Tandem users (just six, I understand) responded to your user satisfaction survey (*Computer Weekly*, January 26), I do not know. We have 60 customers in the UK, with a total of 428 processors in key commercial and public sectors.

An indication of the satisfaction of these users comes from the high proportion of multiple installations and business we do with them. And from the US, the respected Cowen/Datamation survey of computer users has ranked Tandem the best in the industry for customer satisfaction and loyalty for each of the past four years.

PETER HERMON
Managing Director
Tandem Computers
Northolt, Middlesex.

Prime grows

I HAVE to express my amazement at a front page headline, "DEC shows recovery but Prime falls" (*Computer Weekly*, January 26).

DEC's results did recover from the previous quarter, although they are still 18% down from 1982, as you stated. The analysis of Prime's results also shows quarter-to-quarter increases; revenues grew 9%, and net income a respectable 32%.

Your report correctly stated that Prime's 1983 income was 28% below that of 1982, but failed to mention that Prime's net income was still 6.4% of revenue, whereas DEC's "recovery" figure is 5.7%.

ROBIN T. SHELTON
Director Finance & Administration
Prime Computer (UK)
Hemel Hempstead, Herts.

Terminal nonsense

YOU reported (*Computer Weekly*, January 19) that a working party set up by the Computer Board for Universities and Research Councils says that "at least one student in five should have a workstation by 1990". Also, "... the initial price for the complete workstation should be £1,000-£2,000."

Apparently this will "supply industry with computer literate graduates..." Is there really a belief that in

1990 the average university student will spend two hours each day hunched over a computer terminal, and an intelligent terminal at that?

It really is time we tried to stop this proliferating nonsense. I don't mind cluttering our colleges with terminals at (say) £20 each, but the £1,000 plus price tag is ridiculous, and should have been seen as such.

IVOR CATT
St Albans.

Way to cut job costs

AS a contract programmer I am fairly often obliged to turn down prospective contracts because of excessive travelling time, inability to meet starting dates and so on.

Today, however, I was gratified to find a much better reason for declining an offer - the client was proposing not to pay me. The deal apparently involved a two-week probationary period - not in itself unusual - the successful completion of which would lead to a nice six-month contract. Failure to meet the required standards, however, would lead not only to

the order of the boot, but also to a marked absence of pay-cheques for the two weeks in question.

After being reliably advised on the illegality of this procedure under common law, I was able to inform the contract agency concerned that I would not be pursuing the post. I must admit my admiration, however, for what could be a novel method for companies to reduce their development costs.

PROGRAMMER
(Name and address supplied).

A code for everyone

THE postal sort code is non-computational, non-validatable and, when translated into national grid co-ordinates provided by the Post Office, inaccurate.

How much better it would be to have an arbitrary 10-metre point in the polygon expressed in national grid co-ordinates with building elevations expressed too - in the format XXXX-YYYY-ZZ.

It would be computational, graphically plottable and not in

need of conversion. The inconvenience to the Post Office? Software changes in the code.

For all the money spent trying to promote the Post Office's internal code, any future allocations could be spent on reasoned arguments for using a code which is of use to everyone.

J. D. THOMSON
Penarth, Wales.

Personal meaning

IT would seem from John Cornwell's article (*Computer Weekly*, December 8) that there are two interpretations of the term "personal computer". As Cornwell uses the term, it means a computer used exclusively by one person.

I think the more common meaning of the term is a computer which is of primary benefit to the individuals working in a company. Companies use mainframe and minicomputers to increase the efficiency of the organisation with such applications as payroll or production scheduling. Individuals use personal computers to enhance their own efficiency and the quality of their work.

FRED DOHERTY-BULLOCK
European product marketing manager

Apple Computer France.

Problems solved

THE article "Life Grows Hectic for the Exchange Makers" (*Management Review*, January 19) infers that the Miel SX-2000 software problems will not be fully resolved until next summer.

Anthony Kenyon probably wrote the article several weeks ago, but you should be aware that the SX-2000 has received BT approval, and that deliveries, installation and operation are now taking place.

We would like it to be fully appreciated that the SX-2000 has justified all our hopes and, more to the point, customer expectations.

A. J. PUFFETT
Miel
Newspost, Gwent.
News of BT approval was carried in the January 5 issue - Editor.

The rural defector

BT is anxious to assure its customers that it will continue to provide call box services after privatisation and has started a vigorous advertising campaign to allay the fears of rural users.

One TV ad shows a phone box surrounded by sheep with a beaming farmer inside the box making a call.

The sheep are real; the farmer is real; but the box is a fake put up

just for the ad. The real joke is that the very same farmer has been campaigning for years to get a real box installed on the very same spot.

BT has stubbornly refused to oblige on the grounds that it would be uneconomic and is in fact removing kiosks from the area.

But what was the long-term farmer doing helping the enemy in the first place?

Appropriate

FOR those of you who take pleasure from life's little ironies, here is a tale to bring a smile to your lips: If you call your mind back to the promised arrival of IBM's 3380 disc storage system, you will remember that it was subsequently beset by postponement, postponement and postponement, and that the system is now with us, still IBM's US press officer for disc systems. His name? Mr. De Lay.

IBM shares Popcorn

IBM is not fabled for rushing new products on to the market if it can help it.

Dragging things out for a couple of years not only helps Big Blue iron out the bugs, but keeps a vast army of IBM pundits in a very lucrative job as they try to out-speculate each other in the twilight of the new product will do.

But it looks as if the PC's big brother, Popcorn, is due for a premature birth in the early spring.

It would be cynical in the extreme to say that IBM is desperate not to be beaten to the punch by its new arch rival, AT&T, which plans to launch its own range of business multi-user machines based on its very own world-beating Unix operating system.

And IBM has quietly adopted Unix for its own machines.

A bit like Soviet supreme Yuri Andropov getting the Republican nomination.

10 YEARS AGO

FROM COMPUTER WEEKLY OF FEBRUARY 7, 1974: The first UK order for the IBM 3690 finance communication system was placed by Lloyds Bank as

part of a £1.5 million plan to update its online branch network. A new association for users of CMC key-to-disc equipment, Cumac, was established.

PUZZLER

A FRIEND of mine has two ordinary six-sided dice which are specially marked, so as to give every number from one to 12 an equal chance of coming up when the two cubes are thrown simultaneously.

This equitable arrangement is in contrast to the conventional 1-2-3-

4-5-6 layout, which favours a combined seven-count in particular, and of course eliminates all possibility of a one-count. Can you work out the special markings (which must obviously involve at least one blank face), before turning to page 79 for the solution.

Liveware File

by Bon

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Microdata is a McDonnell Douglas company.

LANs are beginning to bear rich fruit

Linking terminals and micros cheap is the new trend, says Steven Sossola

THE latest developments in local area network products show a new trend towards linking terminals and micros cheaply into large communication areas.

The use of gateway nodes to link separate clearway networks via telephone lines is one example.

Clearway is the network produced by Real Time Developments. Two gateway nodes join two Clearway rings, allowing communication between them at 9,600 bits per second. The nodes cost about £300 each.

In terms of market size and range of vendor support, Ethernet is probably the most significant example of a local area network. The Ethernet specification was originally developed by DEC, Intel and Xerox in 1979.

The fast data rate (10 million bits per second) of Ethernet soon became the model for networks from other manufacturers. But the level of interest shown by many users in the new type of local networks indicates that they, at least, can see a need for something different.

Consider the Network Systems Corporation of America, for example. NSC has developed a bus contention system that differs quite subtly from Ethernet. There are two systems available using the technique: Hyperchannel, which is intended for linking mainframes, minis and their peripherals; and Hyperbus, which is a low speed version, intended for terminals and small systems.

Hyperbus is new to Europe, although it has been installed on selected US sites for at least 18 months and will soon support X.25, the packet switching protocol increasingly used in telephone links. Phone links were actually outside the original brief for networks, which were, after all, meant to be local.

Essentially, a local area network (LAN) was cheap. As the cost of peripherals decreased and companies cut prices even further, terminals and workstations proliferated at a great rate. This created the demand for low cost, convenient ways of interconnecting them locally.

Today, some manufacturers are promoting network technologies designed specifically for their own distributed processing and office automation systems. Wang and Prime spring to mind. But there are other companies trying to establish new local network concepts.

These new techniques are usually promoted on the basis of their data carrying capacity, their ability to combine data, voice and video, and their potential for multi-vendor compatibility.

When all the cabling is laid down, the software worked out and the transceivers or network interface units are added on, these networks can be expensive. A cheaper solution was found using the centre of every telephone network: an exchange, which is capable of functions very different from those of a usual kind of network.

Each telephone on a site is connected by an exclusive line to the exchange, and through that to

other users on the site, as well as elsewhere using the public works and X.25 protocols.

The ordinary twisted pair used to connect telephones provides the 64K bits per second necessary for a standard digital voice channel. And the same can generally be used at 1.256K bits per second at distances of several thousands. Higher speeds are possible; distance decreases with increasing speed.

The private automatic exchange (PABX) was designed with speech in mind, but their communications path between subscribers can be used for data well.

For example, if a 1,000 combined voice and data were to be used for line connections only, there would

As the cost of peripherals decreased and companies cut prices, terminals and workstations proliferated

500 connections times 56K bits per second (line speed), times two duplexes; 56 million bits per second of data capacity. This is only possible, though, as a large number of slow circuits and not as a combined high performance pipe.

With the introduction of computer techniques and solid state switching, the PABX can be used to provide the kind of facilities required in a computer network.

A significant example of a communications-oriented network is Instant from Micom Bore. It uses telephone cable already installed in a building, or area, and in this way, Micom hopes to avoid the kind of interfacing problem that exist with some of the traditional networks.

In addition, says Micom, local networks are rarely self-contained, and this explains why such products support X.25. Many manufacturers, traditionally those associated with data communication methods, have similar products. LDR Systems and Microdata, for example, both have network products that support X.25.

This approach to local networking — as an add-on for existing facilities and exploiting unused bandwidth — has several advantages. It is lower in cost and can be implemented piece by piece.

Also, implementing these kind of network does not force you to gamble on one concept or another in the hope that it eventually becomes an industry standard. The technique is "evolutionary, not revolutionary", says Micom.

Other than the telephone system, the cable TV system has the capability to provide low cost bidirectional bandwidth anywhere in a city. The CATV system can carry public and private data and can bring a cable to almost any site. Steven Sossola is former editor of Systems International.

REPORT FROM AMERICA

Rocketing costs of innovation have resulted in a growth of limited high tech partnerships, says Bohdan Szuprowicz

Why research is being forced to go into limited partnership

RESEARCH and development is the lifeblood of high technology companies. Without it they wither and die within a few short years. Unless a high technology firm can spend an average 7% or more of its revenues on R&D it will have a hard time keeping up with the rapid pace of innovation.

In some high technology sectors such as integrated circuits the ratio is even higher. What's more, the amount of funding required to perform R&D on increasingly complex microchips, systems and software is escalating rapidly and only the largest corporations can afford to engage in sufficiently thorough R&D programs. Even IBM, which is estimated to have spent \$3 billion on R&D during 1983, is probably beginning to realise that it might be impossible to continue this level of expenditure indefinitely.

Since IBM spends more on high technology R&D than most major competitors combined, any show-down in its spending will mean new untested market opportunities for its competitors.

On the other hand the cost of advanced R&D is becoming so high that few if any of the competitors could afford it even if they could peer through IBM's traditional secrecy to identify the opportunities.

As a result the scene is set for further growth and proliferation of high technology R&D limited partnerships. These are specialized investment vehicles for funding research and development for specific high technology programs without straining the resources of the corporations that will benefit from the results.

Although relatively costly, a

limited partnership transfers financial risk to a general partner and does not affect the profitability of its parent.

Typically a high tech R&D limited partnership offers a tax shelter to wealthy individuals and institutional investors who are prepared to finance one or more specific projects over a number of years. Investors can offset up to 100% of their contribution against tax on other income and are later rewarded through royalties on new products which are taxed at the 20% capital gains rates, or through conversion into company shares at an effective price considerably lower than the going market rates.

Initial high technology R&D limited partnerships consisted of a general partner who performed specific R&D for a single company. Storage Technology was among the first. It raised \$95 million through two partnerships for development of mainframe and optical memory. Trilogy, the high technology super-venture, was initially financed through a \$60 million partnership, Trilogy Computer Development Partners, which was underwritten by Merrill Lynch, the largest investment broker in the world.

That was in 1981. Since then many smaller high technology R&D limited partnerships have appeared. Some of these continue to focus on specific R&D projects for a single corporation such as the \$20 million Emerson Research Partners developing a two-way automatic communications system for implementation of electric load management in power utilities.

Similarly, the \$3 million Phylon Partners is involved in developing sophisticated computer language

Typically a high tech R&D limited partnership offers a tax shelter to wealthy individuals and institutional investors who are prepared to finance one or more specific projects over a number of years

compilers. However, the \$16 million Diversified Technology Partners, The Software Fund, and tiny \$2.5 million Indus Electronics Fund are more in the "blind pool" category trying to pool together all the funds from many limited partners before deciding what R&D projects to finance and for whom.

The largest high technology R&D "blind pool" to date is the

\$100 million Prutech Research and Development Partnership offered by Prudential-Bache Securities in November, 1983. Prutech does not identify specific R&D programs in which its funds will be invested, but it will be guided in its activities by market research studies from Dataquest, the high technology markets forecaster, and by feasibility studies from Stan-

ford Research Institute, a respected high technology consultant.

The Behr Venture Partners Ltd — 1983 is a \$32 million limited partnership organised by Bateman Eichler Hill Richards, a brokerage firm owned by the \$8.8 billion Kemper insurance and financial services conglomerate. This partnership is providing almost 28% of its funds to Denelcor for development of the HEP II supercomputer; 25% to Automatrix for artificial vision, robotic "me-gassemblies", artificial intelligence expert systems, and Computer Controlled Workspace (CCW); over 21% to Bedford Computer for image generator, digital scanner and graphics terminals; over 14% to IMTEK/Information Displays

for electronic publishing hardware; and almost 12% to Digilog for a new data communications network management.

Hutton/PRC Technology Partners with \$25 million, is the smallest of the major high technology R&D limited partnerships offered to the general public in late 1983. In this case Planning Research Corporation, a worldwide engineering and information services firm, teamed up with E. F. Hutton, a major securities firm.

So far there is little track record to evaluate the performance of high technology R&D partnerships but the rocketing costs of innovation and escalating competition in the financial community assure their future.

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Wall Street... High-tech firms need substantial investment for R&D.

SECURITY

When disaster strikes, how much data will you save?

Taking fire and security precautions seriously can sometimes save a business, writes Michael Wood

ONE Wednesday evening fire broke out in the warehouse of a North Wales company. Within half an hour the offices and factory were wiped out. Their computer system and half their business records had gone.

The insurance records do not show it as a "computer fire", because the building was the major loss.

Most of the company's systems and program documentation were inside peoples' heads. This company was like almost every other. No one realised just how much the business would be affected by losing its computer system and data, because the risks had not been assessed.

Secure means safe against attack or failure. Computer security implies protecting systems from the effects of all manner of accidental and deliberate threats.

Any system exists in a hostile world, surrounded by threats. The electric power supply may fail, especially in winter. The user may enter incorrect data, or purge the current master file. The software is bound to contain bugs, despite the most rigorous testing.

Rats may eat the underfloor cables, and destroy the communications network. This happened at a Bedfordshire establishment, so bait was put down beneath the floor to poison the rats. Unfortunately it caused further troubles. The poison dust got into the air conditioning system, and the operators complained about the smell and the possible health risks.

Physical security is usually the first consideration. Access control and fire precautions are the two vital defences. Access control is essential for all computer areas.

"Need to know - need to go" is the foundation for much security thinking. Access control means that only authorised people are allowed within the controlled areas. In some cases they may be allowed access only at permitted times. For example, cleaning staff might be allowed access only in early mornings.

Many firms employ automatic systems to control access. They issue a badge or token to authorised individuals. The token may be a plastic card which can double as a visible identity badge. The cards carry a unique identity code which can be read by the correct type of reader device.

Many different kinds of code exist using a variety of physical properties. Magnetic stripe cards are familiar as credit and cashpoint cards. The dimensions are internationally standardised and suitable card readers are readily available as OBM equipment.

Other cards use magnetic beads or areas of ferrite embedded within the plastic. Another technique uses thin magnetic wires within the card - the "Wigand effect" where the wire is magnetised circularly at the surface. Wires are magnetised in opposite senses so that a reader can discover the coding.

Some tokens use printed coding.

laminated inside the card that can be sensed using infra-red light, since the plastic is relatively transparent to this. Ultra-violet light is used to read another type of card.

Access control readers for cards are either slots, as on a typical cash point, or "swipe" readers where the card is dropped in a narrow trough and passed sideways past a reading head. Sometimes these give teething troubles for new users who do not drop their card squarely into the slot.

Some systems use radio signals to interrogate the tokens. One has small transmitters, like personal pagers, worn by authorised people. Sensors near controlled doors receive coded signals from the transmitter, and release or open the door for people with the



Rats can eat through underfloor cables, destroying the communications network.

right token. The system is "no hands", so it is convenient for those carrying things.

Another variant uses passive tokens, usually plastic cards carrying tuned circuits. These are interrogated by radio transmitters. The tokens have to be passed within say 10cm of the reader, though the token can be left in a wallet.

Tokens and readers have to be supported by some control system. This can range from a simple unit controlling one door to a complex computerised system covering several sites and thousands of people.

The latest systems provide online monitoring and logging of activity, and are usually integrated with building alarm systems for fire and intruder detection. Based on typical small business computers,

Access control systems must be

they can be programmed to display specific instructions for the various events that might occur. This can be especially valuable for security staff.

The system can give advice about what to do, based on careful consideration by experts before the event. It is an obvious opportunity for knowledge based-systems, that has hitherto been exploited chiefly in the nuclear industries.

All access control systems are inconvenient in some way. Some-one has to manage the issue of permissions, and provide alternative means for handling people who forget their pass. Care is needed with visitors, and those who leave. The system must allow quick disabling of a lost or stolen token.

Access control systems must be

integrated with the fire alarm system. The fire service will want to assess the system before it issues a fire certificate for the premises.

Fire is usually the most serious risk faced by any organisation. The problem is that although we are aware of its dangers, we ignore them. Fire precautions are treated with contempt.

Computers have a low inherent fire risk, but most computers have to be operated in buildings by people. The incidence of fires in computer centres is probably much the same as the incidence in offices generally.

Most of us know of small fires near computer rooms, especially when these are in ordinary commercial buildings. About one in 10 small fires grows into a big one.

Any fire in or nearby a computer centre can cause serious losses. A big fire will probably destroy the building - but little ones cause problems too.

Fire and smoke both pose threats to people. Smoke can be lethal well before the fire looks dangerous. Modern buildings and furnishings contain a great deal of plastic, much of which will burn, producing toxic fumes and dense smoke. Electric cabling is insulated with PVC, which produces corrosive smoke.

Many computers have been written-off after exposure to smoke, even though they were apparently unaffected. The manufacturer usually refuses to maintain the machine, on the grounds that its future reliability might be affected.

Fire precautions are a legal requirement in many countries including the UK. Insurance companies also insist on minimum precautions before they will afford cover. BS6266: 1982 Fire Protection for Electronic Data Processing Installations gives expert guidance.

The insurers are concerned about fire losses because of their high potential cost. Over the years they have accumulated a great deal of experience. The Fire Offices' Committee issues Rules for the Protection of Computer Installations Against Fire which covers topics like construction and air conditioning systems, as well as design and construction.

An unseen hazard in many otherwise excellent installations is inadequate fire-stopping at cable entries. A modern building will have good solid walls from floor to true ceiling. Inevitably there must be routes for communications cables from the computer to the outside world.

Rapid growth means supplementary holes. All such holes should be plugged so that fire and smoke cannot pass through the barrier.

Original fire-stopping is often discarded in error when additional cables are passed through the existing routes.

Air conditioning systems are the source of many fires that disable computer systems. A minor electrical fault in the typical standalone unit can produce,

smoke and contaminating fumes. These will be dispersed rapidly to all parts of the installation unless the fire detection system has detectors within the air conditioning units.

An air conditioning unit on the top floor of a converted mill disabled another installation. One evening the half-inch cold water feed to the air conditioner burst.



It is vital to have a data safe - magnetic media is far less tolerant than paper

The computer room was directly below, connected by vertical air ducts. By morning the computer was standing in six inches of water. The manufacturer refused to continue maintenance, and the £40,000 machine was written-off.

Every installation should have proper back-up storage for data and programs, as well as all the other essential supplies like inverters, batteries, and fire extinguishers. Fire data safes are relatively expensive, but give good protection if used properly.

It is vital to have a data safe. Ordinary safes are designed to preserve paper in a hot fire, and are insulated to keep the inside temperature down for many hours. Paper will withstand about 130 degrees C, but magnetic media is far less tolerant. Floppies will stand only 52 degrees C, other magnetic about 60 degrees. A data safe has better insulation.

Fire data safes are usually too small. Buy the biggest you can afford for you will soon outgrow it, and big safes are proportionately cheaper than small ones.

A safe is often seen standing with its doors open during working hours. The theory is that the operators would shut it in the event of a fire. This is wrong. Minutes can be vital in a real emergency.

Many firms use off-site storage as well as data safes. Friendly mutual off-site back-up arrangements could often be arranged between firms on opposite sides of a town. All that is required is a small secure room at either end, and an element of mutual goodwill.

Michael Wood is senior consultant.

SECURITY

How to cope with catastrophe

You've no time to experiment when disaster strikes - a standby plan is the answer. Ken Wong gives a rundown on things you should look at

OVER the last few years, many organisations have felt increasingly uneasy about their growing dependence on computer processing in the day-to-day business and administrative functions in the company. As a result the computer service manager or data centre manager has been charged with obtaining some form of disaster standby provision to cater for possible disruptions in data processing.

At the very least, certain critical systems such as payroll can be run at another installation for a short period. Some have gone as far as duplicating the entire computer facilities at a second site.

By and large, there are three types of standby facilities available for consideration:

■ **Hot standby:** Twin computers are used with full switching capability to share common peripherals and mass storage. If one computer is down, processing can continue by switching jobs over to the second computer. Unfortunately the computers tend to be located back-to-back from each other and housed in the same room, together with the communications control equipment to facilitate swift changeover.

If a disaster such as a fire strikes in that room, all the equipment could be affected by the fire and additional remote disaster standby would need to be considered.

■ **Warm standby:** A remote installation is available to take on the processing of systems from the disrupted installation. A minimum delay of 24 hours is normally expected in the changeover of installations. The standby processing capability is normally restricted and would not handle the full processing requirements of any length of time.

To obtain standby processing from a number of back-up installations would necessitate the replication of files, job control and careful planning of staff transport and movements to ensure the processing load can be split and processed at different locations, probably all with slightly incompatible hardware, operating software and mass storage media.

Planning for standby processing of online systems poses another major headache for the computer services manager, especially if these systems serve a large number of remote users scattered in wide geographical locations.

Some service vendors offer the temporary replacement of full mini-computer installations within 24 hours with the equipment transported to a designated site.

■ **Cold standby:** An empty installation is available at a remote site to receive new replacement equipment for the destroyed site. The cold standby site provides temporary accommodation for the new computer installations for up to six months. Portable computer centres are also available to provide temporary accommodations for replacement equipment near the destroyed computer installation.

Proximity to the destroyed site would minimise the delay and cost of re-routing existing communication cable links to the temporary location.

In BIS' experience, computer disasters are rare. Every year some 20 to 30 fires involving computers were reported in the UK among a total population of 50,000 to 60,000 installations. The chance of a company suffering from a com-

puter fire is roughly one in a thousand.

On the other hand standby provisions cost money, more so for hot and warm standby than others. While many computer service managers are constantly reminded by senior executives that reasonable steps should be taken to ensure that the company does not go under or suffer a major setback in business operation, at the same time they have experienced great difficulty in obtaining a realistic budget for standby provisions to cope with an extended computer disruption.

In practice, many installations have resorted to a gut feeling of what systems the operations man-

agement planning strategy review, preparation of action plans, and testing of standby facilities and action plans.

Without a proper appreciation of the extent of damage to business arising from an extended computer disruption and realising what is at stake, it is futile to plan and allocate appropriate resource for standby provisions to mitigate that loss.

An objective business impact review, conducted with senior computer users, would serve to establish the extent of their business dependence on data processing, and highlight the financial

and business implications to the company, arising from both short- and long-term interruption of computer service to various key areas of business and administrative functions.

Following are the highlights of some of the findings of business impact reviews conducted by BIS:

■ £1 million of new business a week for a financial institution would be lost throughout the disruption period.

■ Between £2-3m of business a week to a manufacturing company would be at risk. If the products being manufactured are seasonal, a

serious disruption in the peak season could cause permanent damage to the company's reputation in the market place.

■ Invoicing and stock control from a commodity company would run completely adrift; besides having to finance a cash flow delay of £21m a month, customer dissatisfaction would result in some profitable outlets being lost permanently to competitors.

■ Calculations of wages to hourly paid employees in a brewery would be held up. If disruption lasts for more than two weeks, unless agreement can be reached on alternative pay procedures, union with-

drawal of labour would be almost certain.

■ Monetary losses through operational inefficiency and lost business opportunities in a large multinational would come to £19m for the first week, rising to £50m a month, with a further £270m at risk; cash-flow delays of £40m would be incurred in the first week, rising to £170m for a month, with a further £270m at risk.

The review also identifies the operational requirements of various business systems.

Dr Ken Wong is manager, Security and Privacy Division, BIS Applied Systems.



Strikes can be disastrous...

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Make sure you're protected from weather, mice and men

Lightning, mice chomping through cables and burglars all threaten the computer. John Vann looks at insurance

BY the end of 1983 it is estimated the British public had spent in the region of £300 million on home computers. That is a staggering £195 million more than in 1982. Current estimates also indicate that over a million home computers have been sold in the UK.

As for mainframe computers, the estimated value of such computers sold in the UK in 1982 was £1,492 million. Moreover, the estimated number of computers valued at over £15,000 installed in the UK in 1982 was 53,746.

With about £140 million spent on microcomputers and peripherals over Christmas alone, it is hardly surprising that computers — alongside videos — are emerging as a popular target for burglars.

Vending machines have overflowed and computer operators have stood on disc packs

lars. That could mean costly losses for their owners, unless they are properly insured.

The trouble is that the home computer boom is still relatively new in the UK — as is the business computer's — and so people are not generally aware that special insurance cover is available.

As far as computer insurance claims are concerned, it is not only burglars who create a menace. It's a fact of life that risks lurk in all our activities — and computer operations prove no exception.

If a computer is out of action for more than a few hours, this could result in considerable upset for a business, probably cutting off vital sources of information, not to mention the cost of repair.

The user may point out that certain protection comes under a maintenance contract or a manufacturer's guarantee. That's good thinking, but it is unlikely that either of these will pay the cost of repair when the damage comes from external sources or causes, or

through negligence. It is also unlikely that a contract or guarantee will pay for lost profits or revenue, or an increase in working costs following an accident involving the computer.

It's common sense that any business — irrespective of size or type — that has invested in a computer of any shape, size or cost should protect that valuable asset with adequate insurance coverage.

On the face of things, if a computer or system is installed in a firm's premises, there might seem to be no reason why it should not be insured along with all the other contents of the business. Such a method of insuring computer equipment, however, is almost certainly the exception to the normal way of doing things.

There are, in fact, practical reasons why special arrangements are generally made for insuring computers. For instance, the insurance company covering a firm's normal business contents, such as equipment, fixtures, fittings and stock, might not be keen on computer insurance and therefore might not offer an attractive contract cover or premium-wise.

With the cover given under a computer insurance policy, there is no "tariff" or standard wording. Each insurance company that transacts the insurance adopts its own policy wording, terms, conditions and premium.

Perhaps initially we ought to consider some insurance policies specifically tailored for smaller computers, ie micros and minis, as these are popular in businesses.

About a year ago a computer insurance package, underwritten at Lloyd's and called Compu-Risk, was launched by Wigham Poland, a firm of insurance brokers based in London. A vital part of the package provides for the cost of reconstituting computer records destroyed, together with any loss of profits resulting from the loss of the information.

In addition to basic cover of all risks of loss of, or damage to, hardware or media, several useful cover extensions are included,

These are reinstatement as new on all equipment up to five years old; automatic cover for additional equipment obtained; full cover on equipment during transit (also increased costs from any loss or damage); increased costs resulting from loss of, or damage to, media; loss resulting from malicious interference with software or data files; increased costs or loss of profit or revenue, whichever is most appropriate, resulting from any loss or damage or denial of access to computer equipment or records; and loss resulting from failure of British Telecom local lines or public power supply.

Under this package, if a Burroughs B80 computer valued at £20,000 is insured, the premium is likely to be around £200, whereas insuring an Apple IIe for £2,500 might mean a premium of about £25. These are only guides.

Another computer insurance scheme is available from Lloyd's insurance broker Stewart Wrightson, and from certain other brokers. The cover, which is conditional on the user's taking out a maintenance contract, is underwritten by Trident General Insurance Company, a leading office in the insurance of computers.

The scheme breaks into two sections, Microsure and Minisure. Microsure is designed for systems with capital cost of up to £5,000, while Minisure is for multi-user or single-user systems costing more than £5,000. As the nature and extent of the cover provided is identical, we will deal with Microsure only.

This is an all risks insurance contract under which hardware and software are covered for almost everything — from being struck by lightning to having a cup of coffee spill on them. One interesting aspect is the inclusion of cover should there be accidental or malicious erasure of data.

Looking at the cost of this scheme, the premiums are 2% or less of the capital cost of the equipment. If capital outlay were £2,000, the annual premium would be £40. For a capital cost

of £2,001 to £3,500 the premium is 1.5% and for £3,501 to £5,000 it is 1.2%.

General Accident in Perth deals in computer insurance in its own right. It has a subsidiary, Scottish Boiler, with its own policy. General Accident takes proposals from non-engineering insurance brokers, where the computer concerned is used for clerical, administrative, accounting and similar work only and where complete (or partial) package cover is required.

Scottish Boiler considers all proposals, regardless of source, where the computer is used for production or manufacturing or processing process, including systems that may control a design function. It also takes proposals from engineering insurance brokers where the computer is used for clerical and similar work only.

As regards cover for a mainframe computer, it is wise to seek the guidance of a reputable insurance broker or other intermediary. Well to the forefront in this

particular sphere is Eagle Star, another large company, with an attractive computer insurance policy giving wide cover at reasonable cost, though each quotation is based on its own merits.

One point of special note in respect to Eagle Star's contract is that should a computer have to be written off after a claim under the policy, a replacement model is allowed up to the sum insured, irrespective of whether the new model is a better computer.

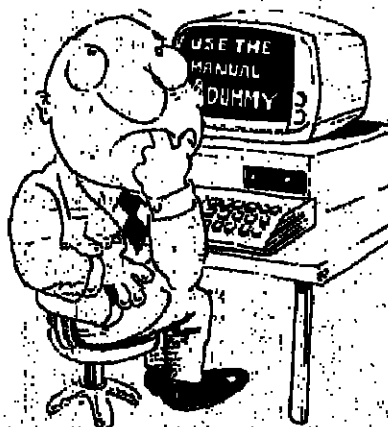
Another leading insurer, Commercial Union, also transacts computer insurance, and gives details of a few, recent incidents that have resulted in claims. Mice have nibbled through cables, vending machines have overflowed, drains have leaked, air conditioning plant has failed, and computer operators have stood on disc packs.

And an ICL 2972 was struck by lightning five times between March and July of this year. No one is safe, including you.

John Vann is a fellow of the Chartered Insurance Institute.



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PEOPLE



Richard Palmer (above) has been appointed director-general of the Business Equipment Trade Association, in succession to Richard Harrington, who has retired after 16 years. Palmer joined Huntley & Palmer in 1947 as a management trainee. He subsequently held a number of prominent positions within the company and was elected to the main board in 1955. In 1973, he was appointed chairman and chief executive of Associated Biscuits International. He also became heavily involved in the trade associations relating to the food industry, including the Trade Committee of the BEEC for the Sugar Using Industries, of which he was chairman.

Altek Microcomponents has named Eric Gregory as area manager, responsible for sales in the Northern Home Counties. He was a field sales engineer at Jermyn Distribution, and before that with the Radio Resistor Co.

Geoff Lee has left Lee-Dickens to form a new company, Lee-Integer, based in Corby, Northants. The company has been set up to design, manufacture and market industrial electronic instrumentation.



Dave Storey (left) has been appointed area systems engineering manager for Data General in the UK and Ireland. Previously Northern regional manager for DG, he joined the company in 1976 from Lucas. Dennis Papworth (right) has been appointed senior marketing specialist for CAD/CAM and industrial automation for the UK and Ireland. This is a new position at Data General, created as a result of the company's increased activity in factory automation. Papworth joined Data General from Adage, a stroke refresh graphics manufacturer based in Boston, where he was UK sales manager.

DIARY

FEBRUARY 10

Treasury Economic Model. Dr R. James, HM Treasury. BCS West Yorks. Hotel Metropole, Leeds. 6 for 6.30.

FEBRUARY 13

Visit to Granada Computer Services. BCS Bedfordshire. Contact W. R. Chisnall, Ampthill 403431, ext 57.

Developments in Office Automation. Speaker from PA Consultants. BCS Scottish WP and OA Group. Music Room, Staff Club, University of Strathclyde, John Street, Glasgow. 6.30.

Small Electric Motors. E. H. Wernick. IBE Raradry Room, Savoy Place, London WC2. 6.00.

FEBRUARY 13-15

Machine Translation three-day conference. BCS Natural Language Translation Group. Contact Douglas Clark on (0234) 750111, ext 3135 or 3136.

FEBRUARY 14

The Memex Information Engine. Prof. F. Heath, Heriot-Watt

University. BCS Dundee. Angus Hotel, Dundee. 7.15.

Open evening. BCS Croydon. Maple Room, Fairfield Halls, Croydon. 7.15 for 7.30.

Not From Russia with Love. Lt-Col W. P. Bewley, Royal Military College of Science, Shrivenham. BCS Harlow. The Norfolk Room, Saxon Inn, Southern Way, Harlow. 7.30.

High Bandwidth Local Area Networks. Dr Roger Loader. BCS Reading. Small Physics Lecture Theatre. J. I. Thompson Building, Reading University. 8.00.

Visit to Plessey Semiconductors. Cheney Manor, Swindon. BCS North Wilts. 7.30. Contact J. Flanagan on Swindon 41702, ext 25.

Visit to Unimation (Europe). Telford. 2.00. BCS Wolverhampton. Contact Miss K. Nash, Computer Centre, The Polytechnic, Wolverhampton.

Cost-effective Engineering Through Simulation. S. W. Holley. British Steel Corp. Institution of Mechanical Engineering, Process Industries Division, JMB headquarters, Birdcage Walk,

Connaught Rooms, Great Queen Street, London. 4.30.

Interactive Cable Television System. Lionel Mudd, Rediffusion Engineering. BCS Data Communications Group, BCS headquarters, London. 6.00.

Buying a Business Micro. John Turnbull. NCC. BCS Humber-side. Hull College of Higher Education. 7.30.

Data Communications Strategy — Past, Present and Future. Malcolm Reed, TSB. BCS Manchester. NCC. Oxford Road, Manchester. 6.15.

Visit to Plessey Semiconductors. Cheney Manor, Swindon. BCS North Wilts. 7.30. Contact J. Flanagan on Swindon 41702, ext 25.

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David Turner (left) has been appointed sales director of ADR UK, having held the position of sales manager for the last three years. Nicholas Pollard (centre) is promoted to European marketing manager, a newly established position, reporting to the managing director of ADR Europe Ad de Graaf. Dick Borghart (right) already a director of the company, will take over as managing director of ADR UK. He is also responsible for ADR's operations in the Benelux and Sweden.

H. C. C. (Bill) Jones has joined X-Data as sales director. He will be responsible for setting up a team that will concentrate on OEMs and National Accounts, selling Oki and Dwyer Peripheral Products. He was previously with ICL for over 10 years, his career with them including major account management, sales management in the Birmingham area, and latterly OEM/sales management for the UK and Europe.

TDS Circuits has appointed Gerald W. Pearson as export sales manager. He was previously with Marconi Radar, Leicester, where he was responsible for the sales and marketing of flight, sea and land-based simulators, airfield electronics and general defence equipment.

Gary Kirkwood has joined Harris Systems as a terminal products sales executive. He joined Harris from Computer Applications, a DEC OEM systems house, where he was sales manager for the past two years. Previously, he was a sales executive with Rank Xerox.

Edward Cunningham is now Northern regional systems engineering manager for Data General, responsible for controlling systems engineers based in the company's branch offices at Glasgow, Belfast, Dublin, Leeds, Birmingham and Manchester, where he will be based. Cunningham has been Data General's systems engineering branch manager for Scotland and Northern Ireland since 1980.

Trevor Hunt has been appointed a financial controller of Datasolve. He has been chief accountant since joining the Sunbury-based firm in 1981. Ian Taylor, now managing director of the bureau operation of Datasolve, was previously head of a development division and subsequently manager of customer service development with ICL, which he joined in 1971.

Sinclair Research of Cambridge has appointed Anton Boyes as retail business manager. He joins Sinclair from Boots where he was latterly assistant merchandise controller and instrumental in establishing Boots as a major retailer of home computers.

Richard Seaton (above) has joined Aston Technology as engineering manager. Previously he was responsible for initiating the hardware assembly and maintenance operation for Geest Computer Services, after leaving Ferranti.

John E. Berndt (above) has been appointed vice-president, market planning, for AT&T International. He succeeds George R. Serpan, who becomes vice-president, business services, AT&T Information Systems, which was Berndt's most recent position.

PA, the international management and technology consulting group, has announced appointments to its international board of John Foden, since 1980 a member of the UK board of PA and head of PA Personnel Services; Peter Merigan, who became chief executive of PA in Australia in 1981; and John Jarvis (right), chief executive of PA Computers and Telecommunications (Pactel) Europe.

Derek MacLaren, who until the end of 1983 was PA's corporate development and marketing director, has become a non-executive member of the international board. He is replaced by Keppel Simpson, previously chief executive in North America.



Chris Leak has joined NEC Business Systems (Europe) as assistant general manager with responsibilities for marketing NEC's range of microcomputers in the UK, and Europe. Before joining NEC, he worked for ICL as branch manager (small systems) for South-east England and for Philips where he was a national sales manager for office computer systems.

Holman Hunt, managing director of PA Computers and Telecommunications (Pactel) has retired. He began his career with PA Management Consultants in 1952, and helped the company move into the computer field in 1957. Hunt's successor is Cameron Low, previously director of Pactel's Software Division.

Steven Olech has been appointed to the partnership of management consultant Annan Impey Morris, with particular responsibility for advising on computers and information technology.

National Advanced Systems announces the appointment of Barry Graham (above) as director of systems marketing for Europe. He joins NAS from IBM UK where he spent almost six years in senior marketing and sales positions. He was responsible for systems marketing of MVS and the 308X and his last position with the company was marketing manager for public utilities. Prior to IBM, Graham was with Sperry Univac for 13 years, rising to technical director responsible for systems support in the UK.

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Janet Day (above), founder member of the Institute of Word Processing, has joined Delta Data Systems as sales executive for the Northern Home Counties and the City. She has recently been co-opted on to the Council of the Institute. Day started her career running a word processing bureau before moving to Olympia to sell business machines. She has joined Delta from Triumph-Adler.

Helping top and middle-managers to evaluate data more effectively and strengthen their planning and decision-making skills is the role of David O. Griffiths, newly appointed business consultancy manager for Slough-based Management Decision Systems. Most recently, as senior management scientist with Mars Group Services, Griffiths directed the design and implementation of a corporate strategic planning database for Mars Inc.

A specialist in structured methods and project management with a major Lloyds insurance broker, Mike Smith has joined the Span Group of companies as a senior consultant and lecturer. He spent five years with Stewart Wrightson and, as standards training officer, led a major project to introduce new training and project management methodologies throughout the Stewart Wrightson group.

Neville Reynier, 38, has joined the Mitsubishi Semiconductors team as sales manager for the UK and Eire. He was previously with Fairchild Camera and Instrument (UK) as manager for OEM.

John E. Berndt (above) has been appointed vice-president, market planning, for AT&T International. He succeeds George R. Serpan, who becomes vice-president, business services, AT&T Information Systems, which was Berndt's most recent position.

PA, the international management and technology consulting group, has announced appointments to its international board of John Foden, since 1980 a member of the UK board of PA and head of PA Personnel Services; Peter Merigan, who became chief executive of PA in Australia in 1981; and John Jarvis (right), chief executive of PA Computers and Telecommunications (Pactel) Europe.

Derek MacLaren, who until the end of 1983 was PA's corporate development and marketing director, has become a non-executive member of the international board. He is replaced by Keppel Simpson, previously chief executive in North America.

Richard Seaton (above) has joined Aston Technology as engineering manager. Previously he was responsible for initiating the hardware assembly and maintenance operation for Geest Computer Services, after leaving Ferranti.

John E. Berndt (above) has been appointed vice-president, market planning, for AT&T International. He succeeds George R. Serpan, who becomes vice-president, business services, AT&T Information Systems, which was Berndt's most recent position.

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CONFERENCES

Five seminars are to be held by Control Data Education Services Division during February at Control Data House, Shaftesbury Avenue, London WC2.

How to Design and Build DP Internal Controls is a two-day course set for February 14-16. It is designed for anyone concerned with DP controls and subjects covered range from introduction to internal controls, installation controls, application system controls, system development controls and controls over system maintenance. The cost is £355.

Designing Secure Applications, on February 20-21 aims to provide practical guidance on how to design and secure computer applications. Subjects covered range from controls in a DP environment, designing controls for the user, a strategy for control, fraud prevention and planning against disaster. The cost is £255.

Computer Security, a two-day course set for February 22-23, will deal with the risks and security problems associated with computer processing. Subjects covered

range from secure application design, to fraud prevention and detection. Cost is £255.

Introduction to Microcomputers is a one-day course on February 27. Subjects covered range from hardware, software, word processing, spreadsheet calculator and database management systems. The cost is £155.

How to Choose a Microcomputer, on February 28-29, aims to give an introduction to the concept of microcomputing and subjects covered include the environment, the machine, the functional aspects of a microcomputer operating system, and using high level languages. The cost is £255.

As part of its 30 years celebrations the Institute of Science Technology is organising a four symposium congress. One of the symposia is designed to accommodate readers who might be interested in computer hardware software selection, the integration of financial, inventory controls etc. Details from I. Gray, Dept. of Medicine, Hunts House, Guys Hospital, London SE1.

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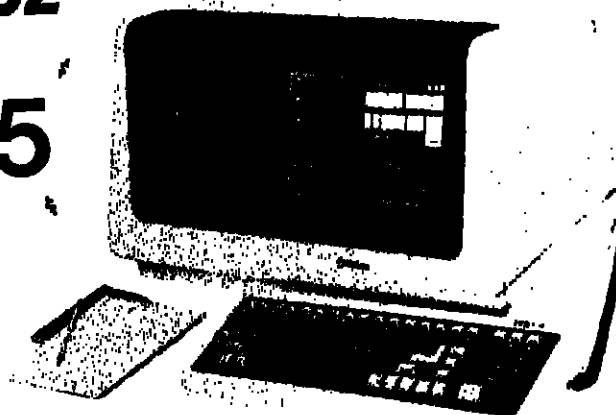
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An important part of our customer service is to offer technical support, and for the right packages we collaborate with our authors both in recruiting technical specialists for our HQ location and in redesigning the packaging and documentation for the US market, in Westminster Software colours.

Please reply in writing to:-

Charles G. E. Jordan, President
Westminster Software, Incorporated
2000 Sand Hill Road
Building 4, Suite 245
Menlo Park
California 94025

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At the heart of Peterborough Software's operation is the Customer Engineering Division which places a high priority on continuous customer support. Giving overall support, they are structured to provide the customer with the reassurance and security of a complete back-up service. To keep pace with the current expansion programme they now wish to recruit a number of key personnel.

CUSTOMER SUPPORT

Candidates should be able to demonstrate good customer liaison skills. The position entails providing support to customers at the critical stages of system implementation and therefore an ability to ensure effective project control is essential.

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It is the responsibility of the customer services department to provide a first point of contact for customers on any matter concerning their use of Peterborough Software products. Good communication skills are of major importance especially the ability to handle customer enquiries over the telephone.

TECHNICAL SERVICES

The backbone of the Customer Engineering Division, Technical Services personnel provide a complete system maintenance service for all Peterborough Software products. This department also controls the final stages of product testing. The ability to pay close attention to details is essential.

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Applicants should have a good academic record and be able to demonstrate a sound IBM based technical background and experience of IBM Assembler, CICS, IMS and VSAM would be particularly relevant. Experience of the payroll, personnel and pensions applications is important and candidates with a working knowledge of UNIPAY, UNIPERSONNEL or UNIPENSION would be particularly attractive.

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INTERFACE
RECRUITMENT & SELECTION CONSULTANTS LTD

No.1 Central Street, Manchester M2 5WR
Telephone: 061-833 0846

Our client is one of the leading manufacturers of powerful 16 and 32 bit computers, super-minis and DDP products in the U.K. today. The Company has invested massive resources into its U.K. based manufacturing facility and is committed to an exhaustive R & D programme. Currently employing over 1000 people nationwide, they achieved a turnover in excess of £45 Million in 1983 and are growing at over 30% per annum.

Their previous Branch Support Manager in Manchester has now taken advantage of career progression within the Company. This has therefore created an exciting and highly important opportunity for a candidate with broad based computer industry experience to enter the Company at management level and take control of the Branch Support function.

The responsibilities include the management, leadership, direction and motivation of a team of 5 support specialists as well as the need to be hyper-active in pre and post sales situations.

Applications are invited from career minded professionals who preferably, but not essentially, have previous supervisory or management experience. In addition to being technically competent you will also need to demonstrate expertise in pre and post sales support together with a high degree of knowledge of networking and commercial/manufacturing applications.

In addition to the above position, there is also a requirement within the Company for Systems Support Specialists in the above locations. If you have at least 4 years experience in D.P., the ability to deal with customers pre and post sales, programming and systems analysis skills and technical support or specific applications knowledge, the Company will want to talk to you.

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Operating Sys. Support

Bucks. to £16K + car
Continuing success and expansion has created new requirements for experienced software specialists to work within our client's European regional support centre. We would particularly like to hear from candidates who are at home in the internals of operating system code. You will provide back-up support to field support personnel on occasions when problems are particularly obscure or sensitive.

Ex-military Tech. Staff

L'don/H. Counties to £18K
We have a number of clients who are interested in employing senior ex-military personnel who have a technical or scientific background. Candidates from a communication environment are particularly sought after. You could expect interest in positions as Senior Marketing or Sales Consultants or Project Management assignments depending on your inclination, qualifications and experience. These are permanent appointments.

UNIX Client Support

Berks. to £13K + car
Our client has established a high reputation for its development of CPU cards for the OEM market. Since its introduction they have concentrated attention on the Motorola 68000 and gained a growing market. More recently UNIX has been added to their product and they now seek a bright, presentable programmer to field customer enquiries. UNIX training will be provided.

CAD/CAM Development

South-West £8K-£15K
This is an outstanding opportunity to join a respected company in the CAD/CAM field with an impressive range of systems. All development work is in 'C' or Pascal on DEC VAX's running UNIX; however, our client is interested in applicants at all levels with one year or more experience of high-level scientific languages such as ALGOL, FORTRAN, CORAL, etc.

Support Executive

Herts. c£12K + car
Approximately 3 years commercial applications including communications, office automation and COBOL are the prime requirements for this specialist support role. You will work in close conjunction with the sales and marketing department and be responsible for the installation and post-sales support of Distributed Data Processing and Office Automation software, together with some pre-sales work.

Electronics Engineers

Wilt. to £12,000
Ideally we would like candidates to have a minimum of 3 years digital design experience using TTL/LSI. This is an excellent opportunity to join a rapidly expanding company who are making their mark in the high technology field of office automation. You will be based in the company's modern development centre. Reloc. assistance provided.

Medical S/W Prog/Analyst.

Herts. c£12,000
The medical systems group within a substantial and expanding organisation requires experienced software specialists to implement new applications. You will work closely with Sales and Marketing and be responsible for liaison with customers to agree specifications and systems acceptance. We prefer candidates to have used block-structured languages and to be able to think on their feet. Excellent prospects.

Real-Time Programmers

Herts. £8K-£13K
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Num. Control Fortran Progs.

Bucks. £10K-£14K
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Fourth Generation S/W

London to £18,000
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Micro Systems Engineers

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Our client deals in sophisticated real-time systems designed for both the U.K. and overseas markets. We are seeking experienced systems engineers with a background predominantly in software with hardware appreciation. Development is typically in PASCAL hosted on PDP-11 under RSX11-M with Intel and Motorola micros as target processors. We recognise that such skills are in great demand and offer high rewards accordingly.

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- New product design

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- Handling third party maintenance contracts
- Supervising research and development projects
- Taking hardware developments into production
- Supervising related system software work

Sales Consultants

Continuing expansion in London and the South East by one of Europe's foremost independent suppliers of DP training courses, State of the Art events and publications, creates immediate vacancies for high-calibre sales staff.

You will need to be able to demonstrate sales success within a profit motivated organisation as well as an in-depth technical understanding of the application of computers in a business environment, and be prepared to travel extensively in the UK, with occasional trips overseas.

Successful applicants will have an unparalleled opportunity to sell a range of products which presently include proven technical training courses, management skills coaching, bespoke corporate and career development training packages, and leading-edge conferences and tutorials.

These positions carry a remuneration package which will reward success as well as reflecting the level of seniority and responsibility within the organisation.

Write, giving full details of career to date to:

Shirley Bancroft
Pergamon Infotech Limited
Berkshire House, Maidenhead Berks SL6 1NF
Telephone (0628) 39101

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SENIOR APPOINTMENTS - £14K +**FINANCIAL & RETAIL SYSTEMS SALES**
LONDON OR MANCHESTER EUROPE'S NO.1 D.P. COMPANY

"A TRULY ASTONISHING RECORD OF SUCCESS OVER THE LAST FIVE YEARS IN SELLING SYSTEMS TO SOME OF THE BIGGEST FINANCIAL & RETAIL INSTITUTIONS IN THE COUNTRY"

75 years of innovation have earned our client an outstanding reputation across the whole spectrum of Information and Data Processing, and they are now recognised as one of the world's leading suppliers. Turnover in the UK has now exceeded £80 million per annum, and includes several individual multi-million pound orders. Indeed, any large financial or retail organisation looking at automation would almost certainly ask our clients to quote.

Their determination to be the most important supplier of Branch Terminal Networks to the country's largest financial and retail organisations has created vacancies within their Major Accounts Division. Two categories of Sales Executive are sought:

SENIOR ACCOUNT MANAGERS
BASIC £15K + OTE £30K +
GUARANTEED £20K + & CAR

Applicants to these positions will immediately identify with the whole ethos of selling large distributed systems into financial and retail markets. Leaders in the field include BURROUGHS, NCR, OLIVETTI, NIXDORF, ERICSSON, PHILIPS and IBM, and it is probable the ideal candidate has worked for one or more of them. A successful sales track record at the highest level and over several years is mandatory.

To you, our clients offer the opportunity to join arguably the most important supplier in these market areas and to earn extremely well while progressing on an excellent career path.

Contact BOB BOWER who is advising on these superb positions.
Reference: CW0902/1

HUTTON EXECUTIVE SELECTION LTD.
31 PALACE STREET,
LONDON SW1E 5HW.

TELEPHONE: 01-630 0434 (24 HOURS)

TRAINEE ACCOUNT EXECUTIVES
BASIC £12K OTE c.£24K
GUARANTEED £17K & CAR

Our clients are also very keen to "grow their own" Senior Account Managers.

They would be interested in talking to young executives with the right personal qualities, currently working for large Building Societies, Banks, Insurance Companies or Retail Groups. They would probably be employed within their company's Management Services or O&M areas, and have a very sound understanding of their particular businesses. Our clients offer you the opportunity to move into the highly lucrative area of computer sales and to receive comprehensive training second to none in the industry.

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HARDWARE, SOFTWARE & CONSULTANCY

The majority of the recruitment work carried out at Huttons falls into the "search" category. Broadly speaking, this involves us in specific retained recruitment assignments for a number of prestigious clients.

These positions are rarely advertised since, after a decade of recruitment experience in the industry, we are quickly able to identify the correct environment in which to search, and the right people with whom to talk.

We may well have already talked to you, but if not, we welcome an opportunity to discuss the many assignments on which we are currently working. If you are a successful sales professional, whether responsible for a territory or a Senior Sales Manager, please telephone either BOB BOWER or MARK IRENS for a brief and informal discussion. You may be surprised at the vast job potential currently available.

Ref. CW0902/2

CONSULT THE PROFESSIONALS IN SEARCH

HUTTON EXECUTIVE SELECTION LTD.
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HONG KONG
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Due to continued expansion in the Far East, the world's leading supplier of packaged application software needs a Sales Executive for its Hong Kong office. The appointee will be required to call on top executives of prospective client companies in Hong Kong and the Philippines, as well as manage existing clients in both areas.

The main requirement is a successful sales track record in the bureau or software environment, particularly with regard to financial/accounting packages.

A mature person is preferred, aged 30+, with the self motivation and

organisational skills necessary for working in a small remote office.

The ideal candidate will be married without school age children, although these preferences are not essential.

This is without doubt an exceptional opportunity, providing professional challenge, good career prospects and a very substantial earnings package, supplemented by accommodation, medical care, car and annual leave with passage to the U.K.

Please contact MARK IRENS quoting reference CW0902/3

HUTTON EXECUTIVE SELECTION LTD.
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LONDON SW1E 5HW.

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SENIOR APPOINTMENTS - £14K +**SALES MANAGER**

to launch new company.

c£35,000 p.a. + car Berkshire
and SENIOR SALES EXECUTIVE
c£25,000 p.a. + car

To assume total responsibility for the sales drive of this new company, you should be IBM trained with an in-depth knowledge of its plug compatible market.

With an agreement to sell reliable Japanese high-speed band printers, the company is poised for a publicity launch in the Spring. This venture will represent a new specialisation within a group already turning over in excess of £9 million per annum. Rapid growth has resulted from successful penetration into markets as diverse as electro optics and microcomputers.

Reporting directly to the Group Chairman, you will have complete autonomy over the sales function. The holding company is geared to maximise the efficiency and profitability of its subsidiaries. Consequently, each company is judged by its margins rather than the size of its turnover. All services are centralised and maintenance/support are of the highest calibre.

In addition to this Sales Manager, we also wish to identify a young sales executive for whom self-motivation and commercial acumen are second nature. The growth potential for both positions is tremendous. In the case of the senior post it could be exceptional - the Managing Director has yet to be appointed.

For further information on either position telephone Marc Zundel on 01 236 7222 (or 01 602 0685 evenings/weekends), or write to him with full career details at:



ZUNDEL LITTLE,
49 Queen Victoria Street, London, EC4N 4SA.
Telex: 883968 HEADS

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OEM SALES MANAGER

£15-30K package + car

With responsibility for selling range of impact and non-impact printers. The candidate should have a minimum of five years' background in the computer and/or peripheral industry. Selling experience essential. In addition to the salary, relative to experience, this position enjoys a range of excellent fringe benefits. Please contact Mrs Shirena Bleach on Woking 71991 for application form.

DIABLO SYSTEMS LTD.
Regent House
20 The Broadway, Woking, Surrey

its SALES

International Telecommunications Services was formed in 1972 as a telecommunications systems company. ITS provides system plus software design, equipment supply, installation and maintenance, and the provision of a spare service available from a network of service centres throughout the world.

Due to the expansion of the company and its markets ITS now requires two domestic sales engineers. Both sales engineers must have experience of data communications/telecommunications with proven sales records, maturity and business acumen.

Ref No MC001/84: Applicants for this post must possess a thorough knowledge of the airline industry.

Ref No MC002/84: Applicants for this post must have an IBM background and a knowledge of the market.

Attractive salaries, with commission, are offered for both posts and other benefits include a company car and contributory pension plus life assurance scheme. Applicants, in the first instance, should write, enclosing a c.v., to:

Patricia Boyle
ITS
Clocktower Road
Claydon
Midlebury TW7 6DT

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Commissioner

c.£26,000 p.a. tax-free
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finest hospitals

The National Guard King Khalid Hospital in Jeddah is managed by the British-based International Hospitals Group (IHG) in liaison with the British government; the venture is supported by IAL.

It is a hospital which combines the highest traditional standards of health care with the latest in medical technology. It has comprehensive Administration, Patient Management, Patient Care and Laboratory Services systems based on multiple linked 11/70s operating under RSTS/E and using DECNET.

As Systems Commissioner, you will be responsible to the Computer Services Manager for the acceptance of systems, their testing, the planning of clerical procedures and for identifying required equipment. With a systems staff under your supervision, you will ensure that the highest standards are maintained in the use of systems and procedures.

With a degree or membership of an appropriate professional institute such as Associate membership of the British Computer Society or the Institute of Data Processing Management, you should have at least five years in systems planning, installation and on-line computer systems. This should include 3 years experience in the management of hospital EDP systems.

WHAT YOU WOULD EARN WITH IAL

The figure quoted is based on a salary of c. £24,000 p.a. (SR120,000) at a conversion rate of SR5.0 = £1, plus a bonus of one month's salary for every 12 months satisfactory service, which is paid as a tax-free lump sum at the end of your time with IAL in Saudi Arabia.

Benefits include free accompanied status accommodation and education allowance, 49 days annual holiday with free return flights to the UK and free medical care. There are excellent on site facilities which include shops, gymnasium, theatre, swimming pool, tennis courts and restaurants.

Preference will be given to suitably qualified Saudi Arabian nationals and to other Arabic speaking personnel.

For further details send your c.v. to Senior Recruitment Officer at IAL, Aeradio House, Hayes Road, Southall, Middx UB2 5NJ. Tel: 01-574 5432 Please quote Ref. M018.



MEDICAL SERVICES
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Data Centre Manager

ESSEX

C. £17,000 + CAR + BENEFITS

We are seeking a manager for a major IBM computer installation in Essex. Our client, the UK leader in its field, is highly successful and profitable, and offers a progressive and secure career. Data processing facilities are a vital part of the business process, and this is reflected by the current and planned levels of investment. The present configuration includes 3083 and 3032 CPUs, 3380 and 3350 disk, and 9700 laser printers, together with a network of distributed processors and over 450 terminals.

A highly experienced operations professional is required, with organisational and man management skills added to a good understanding of data processing and office automation. Applicants will need to demonstrate ability in:

- * controlling the diverse activities within a busy data centre
- * working with systems and technical management, as well as suppliers, on current issues and forward plans
- * liaising with user representatives on service levels and requirements
- * representing the operations function convincingly to managers at all levels inside and outside the DP organisation

Our client's modern offices are located in a low cost housing area with excellent road and rail links to London. Facilities include a free restaurant, free life assurance, an excellent pension scheme and an active sports and social club. If appropriate, relocation assistance will be offered to the successful candidate.

Applications in strict confidence under reference DCM 15360/C, will be forwarded unopened to our Client, unless you list companies to which they should not be sent in a covering letter marked for the attention of the Security Manager.

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WE'VE GOT WHAT YOU'RE LOOKING FOR!

PROGRAMMERS, ANALYSTS AND SENIOR PROGRAMMERS to £12,500 NORTH

This installation offers excellent career opportunities to well educated DP staff who have a minimum of 2 years experience of COBOL on HONEYWELL hardware. Programmers must have on-line and database, whilst Analysts, in addition to a programming background, must have good business experience which includes user liaison.

PROGRAMMERS EAST MANCHESTER £7,000 to £8,500 + subsidised mortgages

Progressive financial house who greatly value their staff offer career positions to young coders with at least two years experience of ICL COBOL. Preference will be given to applicants with M29 and/or TM/FP.

SYSTEMS PROGRAMMERS to £10,000 SOUTH MANCHESTER

This company, a household name in the domestic high technology market, are offering excellent career progress to successful applicants who will have experience of IBM hardware under DOS/VS using PLI and/or CICS.

PROJECT LEADERS, SYSTEMS PROGRAMMERS to £12,000 & £14,000 respectively NORTH

Candidates should be aged under 35 and have a classic DP background. Project Leaders must have a good business/ commercial acumen with management experience in a DP environment. Systems Programmers (required at a variety of levels) will have sound ASSEMBLER experience. Superb career opportunities in a progressive DP Department which offers a first class benefits package.

Contact JOHN LEVINS or GARY SMITH on Leeds (0532) 455911 during office hours, or JOHN LEVINS on Leeds (0532) 741419 evenings and weekends, or write to the address shown right.

IBM PROGRAMMERS, ANALYSTS, SYSTEMS ANALYSTS MANCHESTER based £8,000 to £14,000

Well respected Systems/Software House who have recently opened a Northern Office have vacancies throughout the North for IBM specialists with a minimum of 2 years experience. Permanent positions offering medium and long-term advancement where particular requirements are for expertise in COBOL, CICS, DL1 and SYSTEM 38.

BUSINESS/SYSTEMS ANALYSTS c £9,500 SOUTH WIRRAL

This is a good career move for Business orientated Analysts. Ideally you will have experience of Data Analysis and/or Production Control, but these are not essential requirements for a move into this large company.

ANALYSTS/PROGRAMMERS £9,500 LANCASHIRE

This major manufacturing company who are dedicated to continued expansion utilising computerisation, offer varied career opportunities to A/Ps with a minimum of 3 years experience. Main requirements are for DG Mini experience with programming in COBOL and FORTRAN.

PROGRAMMER/ANALYST £8,000 to £10,000 MERSEYSIDE

An excellent opportunity for a DEC Programmer to progress into Analysts where the work will involve interactive languages. Major retail organisation which uses MUMPS.

REAL-TIME PROGRAMMERS/DESIGNERS MANCHESTER/SWEDEN c£10,000 + Overseas Subsistence

This leading Systems/Software House offers superb opportunities to applicants with 2-4 years experience of PASCAL on any Micros, although MOTOROLA and INTEL are preferred. Permanent positions offering an initial year in Sweden with the opportunity to renew or to transfer to the UK or elsewhere overseas.

SYSTEMS PROGRAMMERS c£11,000 LIVERPOOL

Applicants must have at least two years experience of IBM ASSEMBLER and DOS for this major installation which offers challenging and exciting career prospects.

ANALYST or SYSTEMS ANALYST c£9,000 LAKE DISTRICT

Applicants, preferably aged 25 to 35, must have at least 3 years good systems analysis experience involving both mainframes and minis or micros. The next 5 years in this DP department will include a total review of all systems and accordingly significant Database and Business Systems experience are essential, preferably with exposure to manufacturing/production/ commercial environments.

DEVELOPMENT PROGRAMMERS SUPPORT PROGRAMMERS to £9,000 SOUTH MANCHESTER

These positions only apply to recent Graduates and offer an exciting and challenging opportunity to join new teams developing commercial products. Particular requirements include a minimum 18 months post-grad programming experience and a detailed knowledge of any of: COBOL, PASCAL, C, PL/ZYS, Z80 or Z8000 ASSEMBLER and a familiarity with any of: ARCUS, UNIX, ZRITS, MTOS, CP/M or MSDOS Systems. Programming expertise using IPA, SNA, or DECNET would also be useful.

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PROGRAMMERS LEEDS to £8,250

You will need a minimum of 2 years COBOL experience and knowledge of TP based applications for these newly created positions with an expanding Blue Chip Company. Major developments in Manufacturing, Commercial and Production Systems are planned and prospects are excellent.

PROGRAMMERS NEWCASTLE to £7,900 + major benefits

Programmers with a minimum of 18 months ICL COBOL experience, are sought to undertake development roles on this large mainframe site. Any experience of VME IDMS or TPMS would be preferred, but is not essential, as training will be given.

TECHNICAL PROGRAMMER to £8,400 NORTH YORKSHIRE

This multi-national research organisation is currently seeking to fill a key position within its development department. A solid FORTRAN background and in-depth knowledge of research based applications are a must. Experience of micros and/or database systems would be of interest.

PROGRAMMERS LEEDS to £10,000

Programmers at all levels can expect rapid career progression with this progressive PDP installation. You will need a minimum of 12 months commercial systems experience combined with thorough BASIC + /RSTS expertise.

Contact JOHN MASON or GARY SMITH on Leeds (0532) 455911 during office hours, or JOHN MASON on Leeds (0532) 486967 evenings and weekends, or write to the address shown left.

PROGRAMMER/ANALYST to £10,000 WEST YORKSHIRE

The essential requirement for this position is 3 years IBM COBOL experience gained within a DOS environment. You will work on the development of large financial applications and experience in this area would be an additional advantage.

PROGRAMMER/ANALYST c£8,500 WEST YORKSHIRE

This progressive software house is seeking a Programmer/Analyst with a good ICL background to undertake a customer support role. Sound ICL COBOL is a must whilst exposure to Transaction based systems would be a plus.

SENIOR ANALYST/PROGRAMMER c£9,000 TYNE & WEAR

A small SYSTEM 38 site is currently seeking a senior level Analyst Programmer. You will need good RPGII programming experience, sound knowledge of the analysis discipline and can expect to work with a high degree of autonomy.

ANALYSTS WEST YORKSHIRE to £11,500

Analysts at all levels are sought by this major user to fill several newly created posts. You should be able to offer broadly based commercial systems experience and ideally will combine this with exposure to on-line and database applications. These are excellent opportunities within a secure and growing environment.

PROGRAMMERS SHEFFIELD to £7,500

This high technology company, developing real-time terminal systems, is currently seeking two good programmers with solid ASSEMBLER experience. Hardware background is unimportant but strong motivation and the desire to progress are essential.

TECHNICAL SUPPORT PROGRAMMER WEST YORKSHIRE

Eneg. (minimum £10,000) UNIX Specialists are sought by this major hardware manufacturer to act essentially in a consultancy role. You will support a wide range of users throughout the region and can expect varied and stimulating technical involvement.

PROGRAMMER LEEDS to £10,000

A highly professional software house developing systems around HP hardware is currently seeking a Programmer to undertake a range of development work. A minimum of 12 months HP 3000 COBOL is required and knowledge of IMAGE and VIEW would be preferred.

SYSTEMS ENGINEER c£12,500 WEST YORKSHIRE

This major manufacturer requires several people to strengthen its customer support team and play a key role in planned expansion. You should have good analysis and programming experience and ideally will have a software house/services background.

Provident Life are an established Life Assurance Company (a member of the world-wide Winterthur Swiss Insurance Group), currently situated close to Liverpool Street Station. The company intends to relocate to Hampshire within the next 2 years.

Extensive development has taken place over the past few years and we now operate large and complex real time and batch systems on two ICL 2958 processors. In addition, two Systime mini computers (DEC-PDP11) are used, running under RSTS/E.

As a result of the company's commitment to further major development, we have the following requirements.

Systems Analyst c. £11,500

Candidates should have a minimum of 2 years experience, preferably gained in a financial environment, that has covered the major phases of a development project. Knowledge of ICL IDMS would also be a distinct advantage.

Analyst/Programmer c. £11,500

For this position the ideal candidate should have 3-4 years experience including a solid ICL COBOL background coupled with sound systems experience. Formal systems training would also be desirable.

Assistant Operations Supervisor c. £10,000

Applicants will probably have held a senior position in the operations area such as chief operator or shift leader and will therefore be able to work on their own initiative. Sound experience in most of the following areas is essential:

- DME Operating & Utilities
- VME Operating
- Q2+ Macro Writing
- VME SCL Writing

However the most important attributes are self motivation, adaptability and the genuine desire to make a varied and all round contribution to the running of the operations section.

In addition to regular salary reviews, we offer a generous benefits package which includes a staff mortgage scheme, non-contributory pension, flexitime, season ticket loan, free lunches and a Christmas bonus. A relocation package will also be available as appropriate.

If you think you have the drive and relevant experience for any of these requirements please call Christine McLean on 01-754 7394, to discuss the positions or send your CV to this address.

WARWICK WOODWARD
43-44 GREAT WINDMILL STREET,
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COBOL Programming £6500-£9000 plus Bonus

Our Client, a major International Group, is currently engaged in the development of a nationwide network of HP3000 mini computers.

Additional openings now exist for Programmers to join the Company's elite Group Development Department based at their impressive Head Office complex which is situated in a pleasant rural setting, North of Bristol.

If you can demonstrate up to 18 months solid COBOL experience in a mini computer environment (preferably HP3000, although this is not essential) then our Client can offer:

- ★ Competitive salaries;
- ★ Substantial bonus;
- ★ Training (where appropriate);
- ★ Good prospects for advancement into Analysis and Project Leader roles.

Conditions of employment are good and include generous relocation assistance where necessary.

For further information and application form, contact Ian Payne, Major Account Manager at the SCR Birmingham Office on 031-336 3781, alternatively write to him with brief career details at the Birmingham address shown below.

Specialist Computer Recruitment Ltd

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James House, 40 James Street,
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30-37 Great Charles Street,
Birmingham B3 3JY
021-236 3781

NORTH
International House, 64 Deansgate,
Manchester, M3 3EE
061-433 8427

BELGIUM
Avenue Louise 327,
Boite 4, 1050 Brussels
010 320 440 7161/71

HOLLAND
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1071 H.M. Amsterdam
010 3120-760847

LogistixLogistix Recruitment Limited
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Telephone 01-373 3063

Service Manager

Inner London: Salary to £12K + Bonus

A leading supplier of UNIX based micro systems and networks is poised for a period of rapid growth. The Company has recently established a nationwide Service and Support Division having its Head-Quarters in The City. Our Client is seeking a Service Manager, preferably aged 27-35 years with at least 3 years experience gained in a similar capacity with a micro systems supplier or manufacturer. The position on offer is both exciting and rewarding since you will have full responsibility for all new installations and maintenance both within U.K. and overseas. You will be in daily contact with new and existing customers as well as regular liaison with the Company's sales force and systems engineers. A very competitive salary and a generous performance related bonus scheme are on offer making this position a rare opportunity for the career minded.

Ref: L/6/A

Systems S/W Development

W. Home Counties: Salaries to £16K

Software Engineering Professionals are currently required by the development division of a leading U.S. Systems Supplier. Suitable applicants should hold a first or second class honours degree in Computer Science, Mathematics or Electronic Engineering supplemented by at least two years software development experience in a real-time mini-computer or microprocessor environment. Familiarity with distributed processing techniques, communications software, office automation systems or personal computing would be an advantage, but, more importantly, you should be innovative, flexible and have the ability to learn quickly. Working as a member of a small team, you will be encouraged to develop your own ideas whilst liaising closely with your team colleagues.

Ref: L/6/B

Process Control

London: Salaries to £16K

A leading U.K. Systems House and Consultancy is currently seeking Programmers, Analysts, Programmers and Consultants for its London-based Industrial division. Applicants should be graduates with a minimum of twelve months real-time industrial programming experience. There is a strong preference for candidates who are familiar with PDP 11, VAX 11/780 or HP 1000 hardware, but candidates who have software development experience on other mini-computers should not be deterred from applying. For the more senior positions, you should have current or recent experience in process control applications particularly within the food, drugs or energy industries.

Ref: L/6/C

Micro Data Base Development

London & H. Counties: Salaries to £12K

Programmers and Analyst Programmers familiar with the latest relational database management techniques are urgently required by a number of our clients. Familiarity with Relational, D Base II or any of the databases capable of being run on a leading micro-based system is essential, and should preferably have been gained during the development of applications programs for commercial users. However, another area of great interest is experience in the use of logic-based languages, such as Prolog, to design natural-language interfaces to database systems and those with such a background are strongly encouraged to apply.

Ref: L/6/D

Coral 66 Programmers

S. Home Counties: Salaries to £11K

Applications Programmers and Designers are currently required by the software development division of a leading Systems Supplier. Suitable applicants should offer a minimum of eighteen months CORAL 66 programming experience in a real-time mini computer or micro-processor environment. Particular hardware experience is not important, but familiarity with PDP/11, VAX, Ferranti Argus or the GEC 4000 series would be a distinct advantage. Our client offers an excellent training programme and there will be every opportunity for successful applicants to learn new skills and progress into either a Management or Consultancy role.

Ref: L/6/E

CAD/CAM Sales Executives

E. Midlands: Salaries to £30K (O.T.E.)

Our clients have recently negotiated an exclusive distribution agreement with a leading supplier of 32 bit UNIX and ETHERNET based CAD/CAM systems. To capitalise on this revolutionary product line Senior Sales Executives are urgently sought for the East Midlands and City offices. Successful candidates must demonstrate a continuous level of achievement and commitment in the sale of integrated CAD/CAM systems to large and multi-site users. On appointment all new employees will receive extensive product training, most likely in the U.S.A., and thereafter on a six monthly basis. Our clients offer a generous basic salary and sales related commission scheme. All positions carry a car or car allowance.

Ref: L/6/F

Macro 11 Programmers

Hants/Berks: Salaries to £11K

MACRO 11 Programmers, with at least 12 months post-graduate industrial experience, are required by a small but rapidly expanding Systems House. As their current projects are largely in the field of distributed, multi-microprocessor and mini-computer based systems they are particularly keen to attract candidates with such experience. More importantly, however, they are looking for applicants with substantial PDP or VAX background in database management systems programming on Intel, Zilog or Motorola micros. For those exhibiting above average ability, the prospects for rapid promotion and career progression are substantial.

Ref: L/6/G

PICK Software & Applications

Thames Valley: Salaries to £13K

PICK is increasingly thought of as a viable technical and commercial competitor of UNIX. A number of manufacturers and systems suppliers have requirements for PICK Development Engineers and Systems Programmers. Previous programming experience with PICK mini and other relational or intelligent RDBMS is required. Particular relevant will be those who have a systems software or applications background in database management systems, data security techniques and operating systems enhancement. For certain positions a willingness to travel nationally and internationally is a requirement.

Ref: L/6/H

**UNITED STATES
IBM 8100 OR
SERIES 1**

Our client, a major supermarket chain located in a lovely rural area of New Jersey, is so delighted with the quality of the people they have so far recruited from UK, that they are looking for a further 10 programmers and analysts to join their permanent staff.

There is a vast amount of new development being carried out, and Series 1 programmer analysts must have first class EDL and EDX knowledge, and good business skills. They will be part of a team developing new software products for automated supermarket stores using advanced scanning technology.

8100 programmer analysts must have really sound COBOL and DPPX experience, and will be developing advanced on-line warehouse systems, incorporating stock control, accounting, vehicle routing etc.

Working conditions are excellent, and successful applicants will receive a final interview in New Jersey, a full US salary and a comprehensive family relocation package. This is a lovely area of the United States, close to beaches, State parks and mountains. Call me today for an information pack and application form, or send me your resumé.

Clive Williamson 0604 711209 9 a.m.-9 p.m. any day

Computer & Management Personnel
72 Kingsley Road, Northampton NN2 7BL

The IBM SYSTEM 34/36/38 Recruitment Specialists

MARCH COMPUTER SYSTEMS LTD. one of the UK's leading software houses specializing in IBM Systems 34/36/38 now have the following openings:

RPG III Project Leaders
Analyst/Programmers

RPG II Project Leaders
Analyst/Programmers

Join us to work in our unique environment developing systems on our In-House Systems 36/38 for blue-chip clients in the UK and abroad:

Bespoke Systems

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MRP-II Software (Data-3 Package)

To apply please call **Richard Mileum** on **01-354 1055** during office hours or on **01-958 2553** during evenings and weekends. All response will be strictly confidential.

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COMMAND AND CONTROL**SYSTEMS DEVELOPMENT AND MARKETING
To £20,000**

The highest standards of excellence, across a broad spectrum of applications, has earned Software Sciences an enviable reputation for providing successful systems. A professional approach combined with technical expertise, has enabled us to become one of the largest systems houses in the UK.

High availability, real-time operational computing, communications and information systems are essential to effective command and control in emergency services. An increasing market for our services internationally has produced an opening for a project leader to contribute to our progressive and substantial growth.

We are seeking candidates with a good technical background in the command and control/emergency services field, who will be responsible for the definition and development of business strategy for police, fire and ambulance systems. These services may involve a mixture of consultancy, design and development of software and Products and turnkey systems.

Currently working in a Software House or in an operational environment you should have a broad knowledge of technical and applications developments in the field, and want to be heavily involved in marketing the products or systems designed. You will be preparing business plans, providing technical support, monitoring development progress, evaluating products acquisition and providing consultancy services.

In return we offer an excellent salary, a wide range of company benefits and assistance with relocation where appropriate.

Location: Farnborough, Hants.

For further information, please ring our consultant Francesca Drinkwater or send a detailed C.V.

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This is an ideal opportunity for a competent Analyst/Programmer to move into a management position. Initially, the main emphasis of the job will be the implementation of new manufacturing systems.

Our client is an agricultural engineering company with international markets, part of a £180 Million turnover group. The company has had an IBM System 34 for over 2 years, primarily to run Order Entry and Accounting elements of MAAPICS.

The incoming DPM will be required initially to implement production systems, again using MAAPICS. Thereafter, responsibilities will include overall control of the D.P. Department, all further development and ad-hoc user requirements. Reporting directly to the head of finance, the DPM position has much potential. The company has a great deal of commitment to modernising its systems and methods. This may necessitate an upgraded computer system within the foreseeable future.

If you feel confident about meeting this challenge please contact ABRAXAS today. The entry qualifications are 3 years Programming, Design and Analysis experience using RPGII. Additionally you must have some exposure to IBM System 34 or 36, Manufacturing Applications (preferably MAAPICS) and user liaison.

Conditions of Employment Include 25 days holiday, excellent pension scheme and negotiable salary reviewed after 3 months of service.

To discuss this position further please contact VIVIANE GREEN of ABRAXAS, preferably by telephone on 01-388 0111.

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Software Sciences is at the leading edge in developing radar software, setting the pace with complex high integrity, high availability real-time systems. Powerful radar is essential to operational systems in civilian and military air traffic control, marine navigation and weather radar processing in all of which we are established on an international level.

We are seeking candidates with a good education and a sound background in real-time systems design. Projects currently under development include civilian and military air traffic control and weather data processing systems - specific application areas include:-

- () signal processing
- () tracking algorithms
- () radar data processing
- () flight plan information systems
- () data base systems

Depending on experience areas of responsibility will include, software design, systems design, team leadership and project management. Experience of one or more of the following machines, DEC PDP11, VAX, Texas Instruments, Hewlett Packard or special purpose hardware and interfaces is highly desirable.

Although based at Farnborough, Hants, candidates should be mobile as visits to client sites may be necessary.

In return we offer an excellent salary, a wide range of company benefits and assistance with relocation where appropriate.

For further information and an application form, please telephone our consultant Francesca Drinkwater or simply clip and return the coupon below.

D.P. Recruitment

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TEL: 01-587 5501 (all hour answering)

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SENIOR APPOINTMENTS

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London Home Counties Advanced Data Communications
Due to rapid expansion, Dynatech Communications wish to appoint Sales Executives for London, Herts and Essex. Successful candidates will be involved in selling a sophisticated range of data communications equipment, including:

- ★ Protocol Analysers
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Annual target earnings will be in excess of £20,000 plus car, together with other benefits expected from a major international organisation.

Ideally you will be aged 25 to 35 with a degree or HNC in Electrical or Electronic Engineering and a background in Data Communications and/or Computer Equipment. Previous sales experience is not essential.

Stop Press!

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We also require Data Communications Specialists to operate within the Sales environment. Experience with communications protocols would be an advantage. Salary will be negotiable, according to experience. A company car will be offered together with excellent benefits.

For further details of both positions, please telephone Julian Kirkness today on (0628) 74274, or write to him at Charvil Lewis International, 27 Marlow Road, Maidenhead, Berks SL6 1AE.

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X-DATA LTD is a wholly owned subsidiary of the Dynear Corporation, a financially strong USA company with clear objectives for increased penetration of the European computer and peripherals marketplace.

As part of this planned expansion, the company's recently appointed Sales Director seeks professional sales executives to increase growth within existing and new OEM/National Accounts areas. Products include the highly successful OKI™ printer range, new daisy-wheel and monitor products and potentially IBM™ compatible communications equipment.

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- ★ Proven sales success in peripherals/microcomputers plus
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West End travel company require Mumps Contract Programmers to work at their offices in London W8.

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Applicants must have experience of DSM-11.

For more details contact Colin Jardine on 01-727 7932.

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Independent Television News Limited seeks a hardware maintenance engineer who is competent to component level on a wide range of computer equipment from Onyx C8002, DEC LS11 and similar micro to VAX 11/780 and PDP 11/40s. These machines are now in constant use controlling information processing and storage systems, TV special effects and graphics equipment.

The successful candidate will have gained wide experience in maintaining complete hardware systems and be able to assist with future system development. Candidates should be qualified to degree standard or equivalent. An understanding of PAL TV techniques would be an advantage as an aid to servicing complete systems, including the video processing chains.

The position is based at our Central London Studios and includes a generous pension scheme and free life assurance.

Please telephone the Personnel Office on 01-837 3144 for application form, quoting reference number 0302012, between 10am and 4pm.

ITN is an equal opportunities employer

Would you like to run your own business?

The Evolution Franchise Group is looking for experienced computer personnel with sales and/or software experience.

We will: Organise Premises
Provide training in Synergy Software

Assist in staff recruitment
Help raise finance (a total investment of between £30K-£40K is envisaged to include an IBM PC networking system). The franchise group is based on the highly innovative SYNERGY Software. SYNERGY is a document based system with all standard application modules which also integrates with WP Systems, Spreadsheet and Database. It is multi-user and not working and can work on mini and mainframe systems. If you are interested call David Booth on 0274-309924 for further details.

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Shift Control Officer

CARDIFF up to £15,000

Marketing and distributing gas throughout Wales is a large and complex operation, and computer services are making an increasingly important contribution. Wales Gas are now looking for a Shift Control Officer to supervise and control a computer operating shift on a rota basis.

Located in prestigious purpose-built accommodation in the centre of Cardiff, our installation consists of dual ICL 2966 processors, CTS tape decks, FDS640, FDS160 and EDS80 disc units, LP1500s and NPS front end processors.

This is a key management position with specific responsibility for setting work priorities; providing operational support in respect of hardware, software and application programme malfunctions; monitoring throughput against schedules; maintaining operating standards; user liaison; training shift personnel and participating in the implementation of new hardware. We operate a 24 hour, five day week and you will be required to work appropriate shift patterns.

Applicants, male or female, must have ICL VME 2900 operating experience together with at least seven years' in computer operations including two years at supervisory level. You are likely to be at graduate level but more importantly have well developed leadership and organisational skills.

Starting salary is £13,000, including shift allowance, rising to £15,000. Benefits are those normally associated with a large successful organisation and include relocation assistance where appropriate.

To find out more, ring Ian Campbell on (0222) 33131 ext. 3490, or apply in writing, quoting ref H45/86 to: Graham Moore, Senior Personnel Officer, Wales Gas, Helms House, Churchill Way, Cardiff CF1 4NB.

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IBM EXPERIENCE? SPEAK OUR LANGUAGE?

Bank of America is a world leader in the international finance sector. We recognise the need to develop the highest quality business systems for the future and are committed to the expansion of our UK Systems Centre in Croydon. Our 1984 recruitment campaign is now under way and we are looking for ambitious systems professionals at all levels of experience, from Analyst/Programmer to Team Leader. We also have opportunities for Systems Programmers.

We are a major on-line IBM environment developing systems on the most up-to-date equipment (IBM 3083 and 3033 mainframes) using IMS DB/DC under MVS/SP and VM/SP.

Systems Analyst/Programmers

Can expect salaries around **£12,500** pa. For experienced **Senior Analyst/Programmers** up to **£14,500** pa.

Team Leaders & Consultants

Could be worth up to **£16,000** pa - rising to **£17,500** pa and a car at the most senior levels.

Systems Programmers

With an IBM package support or mini/micro background can expect up to **£14,500** depending on experience.

You'll be joining a young and vigorous team where ambition and ability are rewarded with career progression and an excellent salary package. Generous benefits include a yearly bonus scheme, home loan at 5%, free pension scheme and private health insurance. We are happy to talk about relocation.

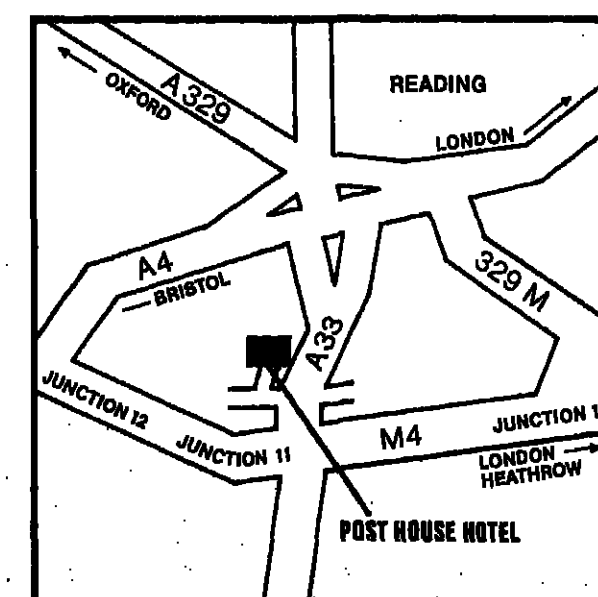
Our working conditions are excellent. During 1984 we are moving into a brand new purpose-built Systems Headquarters.

So come and talk to us about your future. Meet our managers and staff, find out about our development strategy and hear just how much we have to offer. All with no obligation of course. We think you'll find we speak the same language.

If you can't come along to meet us don't worry. You can still find out how you can join us changing the world of international banking by writing to Sue Stephen, Bank of America, 7-15 Lansdowne Road, Croydon CR9 2HA. Or telephone her on 01-681 2611.

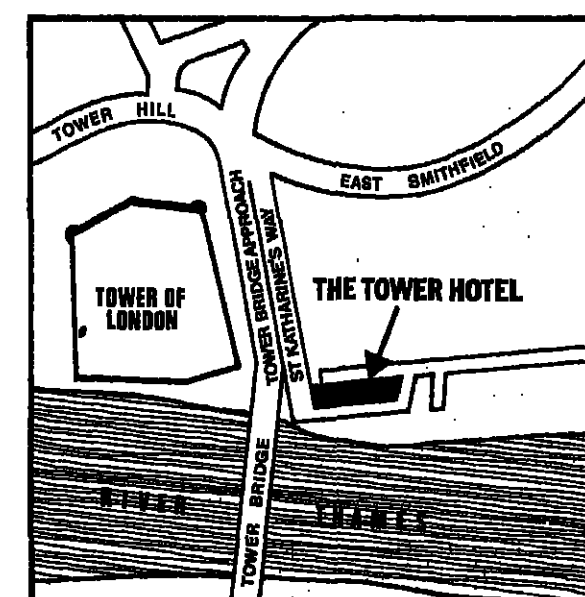
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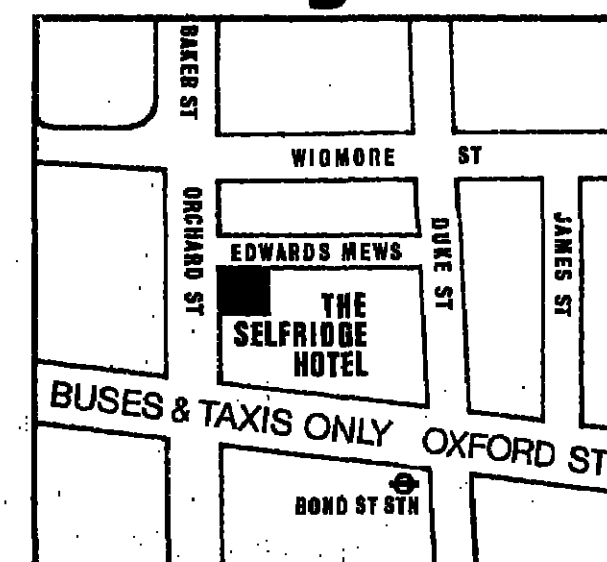
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on Tuesday 14 February
between 12 noon and 8.30pm

**The
Tower Hotel**



St Katharine's Way, London E1
(next to Tower Bridge)
on Wednesday 15 February
between 12 noon and 8.30pm

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Orchard Street, London W1
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We are a national firm of Chartered Accountants with 19 offices, whose London practice specialises in the Lloyd's Insurance market. We use networked PRIME 750 and 550 processors, supporting 60 terminals, for major financial and accounting systems written in COBOL and INFO. Key areas of planned activity include development projects using PRIME INFORMATION, microcomputing, a new word processing system (with over 30 workstations initially) and communications with regional offices.

We seek experienced, highly motivated professionals with good project management skills to take leading roles in two of our challenging development projects. You will work in attractive modern offices adjacent to Liverpool St. station as one of a 15 strong Information Systems Department.

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You are likely to have a minimum of five years data processing experience, of which at least two years were spent developing financial and accounting applications. You are good at working with users and liaising with senior management. You have taken projects through from feasibility to implementation.

Applications with full C.V. to Philip Everest at NEVILLE RUSSELL, 246 Bishopsgate, London, EC2M 4PB. Telephone 01-377-1000 for further details.

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You are likely to have five years programming experience, of which at least two years have been spent using PICK based software. You will have had responsibility for the design and implementation of at least one major project. Experience using PRIME INFORMATION would be a distinct advantage.

(7738)

Technical Support Manager

State-of-the-art computer
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To qualify for this demanding new position, you must have successfully provided technical support in the computer industry for at least three years.

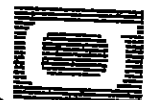
You will certainly need to have gained a thorough knowledge of operating systems, telecommunications and graphics. Aged around 30, your academic qualifications will include a degree in computer science or another numerate discipline.

Match our specifications and you could be the specialist we need to develop and manage a team of applications software specialists and technical support analysts.

You will be responsible to the Marketing Director of Sigmax - the wholly-owned sales and marketing subsidiary of Sigma Electronic Systems - for providing high-quality pre and post-sales technical support on the most advanced computer graphic display products currently being designed and produced in Europe.

The first-class remuneration package includes a substantial negotiable salary and will be attractive to high-quality candidates. Usual large-company benefits plus relocation assistance for the man or woman appointed.

Please send full cv, including current salary, or write for an application form to Mike Short, Personnel Manager, Sigma Electronic Systems Limited, Sigma House, North Heath Lane, Horsham, West Sussex RH12 4UZ. Telephone: 0403 50445.



SIGMAX

Ferranti Computer Systems Ltd.

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Each minute of the day, each day of the year, there are Ferranti ship control systems maintaining a constant vigilance over the oceans of the world.

This is all made possible by Ferranti's state-of-the-art real-time software.

Our advanced naval systems are used around the globe to enable highly trained service personnel to operate at optimum efficiency in data gathering, interpretation, weapon

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Due to a continual expansion programme at our Portsmouth offices, we are looking for innovative and self motivated programmers with experience in design and development of real-time naval software to enhance our existing reputation of software supremacy at sea.



Although we require staff at all levels, you should have:

- Degree in a numerate subject
- At least 2 years experience in development of advance real-time computer systems using CORAL/MASCOT technology
- Some experience of PDP/VAX or Ferranti FM 1600/ARGUS hardware would be an advantage

In return for your expertise, we offer a competitive rewards package expected of an internationally successful company, in addition to which you could expect:

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- 5 weeks annual holiday
- Excellent career prospects
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Call Elaine Britton on Portsmouth (0705) 383101 Ext 3239, or write to her at: Personnel Department, Ferranti Computer Systems Ltd., Mountbatten House, Station Road, Cosham, Portsmouth, Hants PO6 1UD, quoting reference P/932/CW.

(7689)

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West Midlands Regional Health Authority NHS COMPUTING - PROJECT LEADERS

Grade: Scale 14

Salary £9,404-£11,434 (new entrants to the NHS normally commence on the minimum of the salary scale)

The management Services Division of the West Midlands Regional Health Authority is responsible for many computing projects both within the Region and nationally, using ICL, Multics computers and a wide variety of mini and micro computers.

These projects require skilled professional project leaders who are capable of controlling teams of analysts and programmers who have the ability to plan and execute high quality work and liaise directly with client groups within the NHS.

Successful candidates for such staff, based in Birmingham, if you feel that your career has led you to the point where you can handle real responsibility, please send now for an application form from West Midlands Regional Health Authority, Personnel Division, 1st floor, 11, Waterloo House, 200 Broad Street, Birmingham B15 1SW. Tel: 021 643 5761, ext. 41.

Closing date for receipt of completed applications, February 23rd, 1984.

(7636)

LEICESTER POLYTECHNIC

Posts in Information Technology

Leicester Polytechnic is one of a select group of Polytechnics leading the development of innovative courses in Information Technology, defined as a new amalgam of computing and communications systems.

PRINCIPAL LECTURER Post 210

Salary Scale: £12,514-£15,000 (int.) - £15,745 per annum

This post offers an excellent opportunity to lead developments from Higher Technician level up to Masters Degree level in an area of Information Technology appropriate to the candidate's interests. A degree in Engineering, Science, Computer Science/Mathematics, together with suitable research or industrial IT experience is appropriate. We are looking for someone to develop our interests in computer networks, data communications, office systems, speech systems or any other aspect of IT Applications.

LECTURER II Communications Systems Post 20

Salary Scale: £7,218-£11,548 per annum

This post offers a young graduate with some industrial or commercial experience an opportunity to develop a teaching career while undertaking postgraduate study with industry. Experience in one or several of the following aspects of IT, are appropriate: PC's, Systems S, Satellite Systems, Digital Systems, Microcomputers for Communications Systems, Data Transmission, Data Switching and Computer Communications, Computer Network Design, Operation and Testing, Social and Management Implications of IT.

Application forms and further details from The Personnel Office, Leicester Polytechnic, P.O. Box 140, Leicester LE1 2EH. Telephone: Leicester (0533) 861981, ext. 2302.

(7641)

MESSAGE SWITCHING

S-COM Computer Systems Engineers is a rapidly expanding software engineering company. (Our turnover has roughly trebled in each of the last three years). Our main expertise lies in state of the art developments involving communications (military, telephonic, area networks), process control, graphics and mathematical applications.

We have recently been retained (by one of our major accounts) to upgrade a digital PBX to meet exacting military standards. The initial phase of this work is investigative and requires existing systems to be documented according to ministry specifications.

We are therefore seeking to recruit two people as soon as possible to help with this project. Ideal qualifications would be:

1. Knowledge of JSP.188 standards
2. Knowledge of PBX or other telephonic or signalling systems
3. Knowledge of block structured and Assembler languages
4. Five-eight years' industrial experience for the more senior position
5. Three-five years' industrial experience for the second vacancy

The above posts are open to applicants seeking both

CONTRACT or PERMANENT

employment.

Vacancies other than the above also exist within S-COM and salaries are extremely competitive typically falling into the following categories:

- Up to three years' experience to £10K per annum
- Three to five years' experience £9-£13K per annum
- Five+ years' experience £12-£22K per annum

Remuneration for Freelancers for the above posts is £13-£14.50 p.h. and £12-£13.50 p.h. respectively, according to experience. In addition expenses £130 p.w. are payable.

For further details of the above vacancies, please call or write to Graham Blake, S-COM.

FOR DETAILS OF OTHER VACANCIES IN S-COM (CONTRACT OR PERMANENT) PLEASE CALL OR WRITE TO LAWRENCE MILLS.



Computer Systems Engineers Limited

Lower House, High Street, Aylesbury, Bucks. Tel: 0296 32025
Evening after 7pm or weekends 0296 32025

Marketing Services Manager

Computer graphics
negotiable salary
+ car

Sigmax is the wholly-owned sales and marketing subsidiary of Sigma Electronic Systems, Europe's leading designer and manufacturer of computer graphic display products.

In this newly-created position, you will be responsible to the Marketing Director for managing and motivating a team providing all commercial aspects of marketing in a highly technical field. You will also be expected to provide marketing consultancy services worldwide in support of overseas subsidiaries and agents.

A professional marketer, probably in your 30s and educated to degree level or equivalent in a business discipline, you must have sound and wide-ranging marketing experience gained within the computer industry, with specific responsibility for scientific and industrial markets. Well-developed communication skills and powers of persuasion are a prerequisite.

Salary will be made attractive to high-calibre men and women who meet our requirements; benefits are what you would expect of a highly successful international organisation.

Please send full cv, including current salary, or write for an application form to Mike Short, Personnel Manager, Sigma Electronic Systems Limited, Sigma House, North Heath Lane, Horsham, West Sussex RH12 4UZ. Telephone: 0403 50445.



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Travicom is a Thames Valley based company involved in the provision of computerised facilities for the travel industry using the most up-to-date-micro computer and communications technology.

OUR ACHIEVEMENTS TO DATE INCLUDE

- Linking 36 airlines to nearly 1,000 travel agency offices with lease line and dial-up procedures, including the new Traveller Viewdata system.
- An automated airline ticket printer service.
- Interfacing airline systems with office-based computer systems.

AN EXPANDED PROGRAMME FOR 1984/85 INCLUDES

- Connection to a new range of supplier host systems including car-hire and hotels.
- Implementation of a private X25 network to cover the United Kingdom.
- Enhancements to existing services.
- Further developments in ticketing and Viewdata services.
- Product marketing overseas.

Computer professionals are required to join the present experienced and highly motivated team based in Maidenhead. The staff likely to be selected will have a minimum of two years' experience in one or more of the following areas - Micro Computers, "Unix", Programming in 'C' or Zilog Assembler, Communications Software, Terminal Systems or Airline Reservations.

Vacancies exist up to Team Leader/Senior Analyst level. Highly competitive salaries are offered and company benefits include free private medical insurance, life assurance, pension scheme, special holiday discounts, luncheon vouchers and 22 days' annual leave.

Please apply enclosing detailed cv to:

Mrs J. L. Drake, Personnel Officer
TRAVICOM

13 Hermitage Parade, High Street, Ascot SL5 7HE
or telephone Ascot (0990) 20175 for further information

COMPUTER STAFF

Radio Telefis Eireann (RTE), the Irish National Broadcasting Service, invites applications for the following posts:

1. SENIOR COMPUTER OPERATORS

Salary Scale: IR£10,491-IR£11,657 per annum

2. VME 2900 SYSTEMS PROGRAMMER

Salary Scale: IR£13,170-IR£16,970 per annum
(under review)

The Computer Centre in RTE operates on ICL 2956 under DME 2958 under CME and VME 2900, with over 4,000 Mbytes of on-line disks, three tape decks and three printers. TP is a significant part of the operation with up to 100 VDUs on-line. There is a large IDMS database.

The Senior Operator should have significant experience in a VME environment, and DME experience will be of benefit.

The Systems Programmer will be required to support CME and VME, ICL superstructure products, and to provide technical support generally to both operations and systems development staff.

Requests for application forms should be sent to:

Personnel Administration Manager
Radio Telefis Eireann
Donnybrook
Dublin 4

Closing date for receipt of completed application forms - Friday, February 24, 1984.

(7684)

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★ INSTRUCTOR for IBM PC USERS

USA

Contact: STEVE WHITING

Many requirements for Programmer in Boston, Chicago,
Philadelphia, Baltimore, Washington, New York, etc.
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OPERATIONS
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URGENT!

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Saudi Arabia

c£27,000 pa

Our client, one of the largest banks in the Middle East, is currently installing data communication facilities with network management for its domestic branch network, and is in the process of defining the needs in all other areas of voice and data requirements. New software for banking applications are currently being developed, e.g. ATM's, message switching, electronic mail, enhanced accounting facilities to be installed on their NCR 8575/65 and 9300 systems.

The SNR Programmer (Development) will be responsible for the production of all development software to agreed installation standards and deadlines. He will enhance and maintain programming standards, maintain efficient programme testing service, and plan and control utilization of programming resources. Reporting to the EDP Manager, he will have responsibility for technical supervision of 20 programming staff, and for designing and maintaining staff training programmes.

The successful candidate should have a minimum of 5 years' proven DP experience (COBOL) with relevant project leading/programming management exposure. Experience of banking systems utilizing NCR equipment would be a distinct advantage.

The tax-free salary is complemented by excellent terms and conditions which include a two year renewable contract, transportation allowance, car loan, housing allowance, paid leave home and free medical treatment.

Please write - in confidence - with full career details to F. M. Bisht ref. FY.1102/12.

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Due to continued increase in workload, our client wishes to appoint four additional experienced IBM systems software support staff, to join a young and energetic team. This is a well established IBM installation which takes pride in the standard of its work and keeping technically up-to-date. Through the use of a sophisticated network, they provide a professional service using the following systems:-
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The staff recruited will have the opportunity to meet users and advise them on how best to exploit the facilities available, and therefore a friendly outgoing personality is required.

The company offers excellent career development prospects and a pleasant working environment in modern premises, situated within easy reach of major road and rail networks. Company benefits include BUPA, life assurance and health insurance, and a relocation package is available, where appropriate.

Please contact: Stephanie Twigg

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بنك الكويت المتحدة المحدود

ANALYST/PROGRAMMERS

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The United Bank of Kuwait Ltd. is a British Bank established in 1966 and owned by the leading financial institutions in Kuwait. It has total assets in excess of £1,600 million and operates from six different locations in London and two abroad. In order to support the bank's ongoing expansion they wish to recruit analyst/programmers to join existing teams working on major new developments, based at the bank's head office in the city at Lombard Street.

The bank has been a dedicated DEC user for several years and runs its Total Banking package together with VMS and DECNET on a network of five VAXs of which one VAX 11/780 is solely deployed to development work.

The successful candidates should have a solid programming background within a DEC environment to include at least one year with any VAX equipment. The ideal language would be MACRO 32 but the bank are prepared to retrain and therefore wish to interview analyst/programmers with MACRO 11 or any high level language. Applicants should be well educated and be good communicators but more importantly should have the ability and drive to join a team of enthusiastic analyst/programmers working in a stimulating environment. Previous banking experience would be an advantage.

To find out more about this excellent career opportunity please contact Sean Orlor on 01-404 4821

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Together with assisting in product introduction the position will include technical sales support, in-house training and competitive analysis.

This is a highly visible role, therefore it is expected that the successful candidate will have the maturity and confidence to deal with clients at all levels and to be able to work in a high pressure environment.

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You will have responsibility for a team of Analyst/Programmers developing computer aided tools for manufacturing industry in collaboration with major industrial companies. You need to have experience in engineering programming/analyses using formal techniques. You must be fluent in FORTRAN, preferably 77, and have a working knowledge of at least one of the following:

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You should have led a team through a successful product development cycle. You should be prepared to produce results to an agreed project plan within demanding timescales. You should be familiar with the problems of the Engineering/DP interfaces in industry and be confident in leading a team of both engineers and computer specialists. Proven experience is more valuable than formal qualifications.

Please send a c.v. or phone for an application form, quoting reference JMAS 01, to Mrs G. M. Dodd, Personnel Manager, CADCentre Limited, High Cross, Madingley Road, Cambridge CB2 0HB

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You need a strong FORTRAN, preferably 77, programming background and experience of working with formal software development procedures in a technical environment. You should be conversant with at least one time-sharing command operating system.

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COMPUTER WEEKLY February 9 1984 53

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(1769)

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With a minimum one year's experience of programming in "C". Training in Banking systems will be given if necessary.

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You must have both UNIX and "C" experience. Graduates considered.

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BERKS £9,500
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SURREY £9,000-£11,500
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Please ring JILL HARVEY or JIM CHRISTIE up to 8 p.m. Thursday, 9th February, or to 5.30 p.m. other days on the telephone number below, or, if preferred, send c.v. or request for application form to us.

TELEPHONE

253 5042
(10 LINES 24 HOURS)

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ICL SYSTEM 25

Our client, based in the Northern Home Counties, is a successful Systems House specialising in bespoke software for clients nationwide. They are now seeking to add to their highly successful team by recruiting the following people:

Development Programmer

£8½k - £12k

The successful applicant will have had 12-18 months experience on the System 25 and will preferably have also worked on the System 10. This is a senior position in a team engaged on development work within a variety of applications.

Systems Designer

£10k - £12k

With a solid background in design and analysis on the System 25, the person appointed will be responsible for developing bespoke systems and for designing solutions to clients problems that maximise the efficiency of the system. An ability to communicate effectively at all levels is essential. A Company Car is allocated to those who assume Management responsibilities.

If you want to join an expanding and highly successful organisation where you will be encouraged to develop your talents to the full then contact:

Lesley Thompson or Melanie Lindeman on 01-499 7761 daytime or 0484 31025 after 7.00pm.

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The Systems Analyst will work on departmental management systems. Experience of mini and microcomputer systems is desirable and implementation experience must be demonstrable. About six years' D.P. experience is required.

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The Programmer will assist the above posts. Experience of a commercial language is essential and the use of a microcomputer language would be desirable.

The posts, although on the County Treasurer's establishment, are within the Police Computer Projects Branch which is based at Force Headquarters in Trafford, Manchester. For an informal discussion phone Andy Softley, Project Leader, on 061-872 5050 extn. 2782.

Application form, job description and further details available from the County Treasurer, Greater Manchester Council, Piccadilly Gardens, Manchester M60 3HR.

Closing date 15th February 1984.

(7548)

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هذا من اجل



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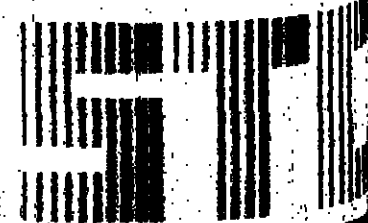
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Package

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to £13,500

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to £11,500

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£11,000

A rapidly expanding software house is currently recruiting Analyst/Programmers with a minimum of 18 months' DATABASIC gained in a PRIME or CMC environment. The software house actively encourages employees to service clients in a consultancy role therefore applicants should be presentable and have the ability to deal with first time users. The client can offer job satisfaction, regular salary reviews and intensive training.

PROGRAMMERS PL1

to £11,500

A company offering a range of financial services has several requirements for PL1 programmers. The minimum requirement is for 18 months' PL1 in a commercial environment for the programming positions and up to four years' plus for the senior posts. Applicants should have good all round programming skills to include design, coding and implementation. Due to the size of the client there is a recognised career path which would lead through to systems if desired.

ANALYST/PROGRAMMERS RPGII/RPGIII

£NEG

We have many clients, all of whom are SYS34 or SYS38 users, who have current positions for programmers and analysts. Applicants should have a minimum of six months' RPG from a commercial background through to three years' for the more senior positions (any MAAPICS would be of special interest). The companies range from Banking through to Manufacturing and offer a wide range of benefits.

404 4821

Apex

Apex Computer Recruitment Ltd.
59 Grays Inn Road, London WC1X 8TL. Tel: 01-404 4821.

Programme Your Future and Analyse Your Prospects

Our clients have commissioned us to identify people for these URGENT requirements.

We have many other exciting opportunities for computer staff, particularly Programmers and Analysts, and would be very pleased to hear from you if you are considering a career move.

Your first step to pursue these exciting career opportunities is to telephone ANTHONY HALL, Computer Search & Selection, Hamilton House, Marlowes, Hemel Hempstead, Herts HP1 1BB. Tel: Hemel Hempstead (0442) 40761.

Luton
Project Leader £10,000-£11,500 + car
Knowledge of manufacturing systems, preferably assembly based manufacturing, Bills of Materials, Production Control etc. Must have good personality and leadership qualities.

Analyst/Programmers (2) c.£9,000
Early-mid 20's with good knowledge of COBOL essential. Operating Systems, MVS/JES 2. Excellent opportunity to expand experience.

Programmer £8,000-£10,000
To work in a small project team with lots of scope for development. ICL 2955/58 under VME experience essential. If more senior, then must have VME/TPS/TDMS.

Hemel Hempstead
Junior Programmer up to £7,750
12 months' minimum experience of IBM/COBOL. Operating Systems not important as training will be given.

Middlesex
Systems Programmer c.£14,000
3-5 years' experience of IBM under OS/USI or MUS with CICS.

Computer Search & Selection

SYSTEMS ANALYSIS

CENTRAL LONDON up to £12,000

DOES THIS OPENING MEET YOUR CAREER REQUIREMENTS?

- ☐ **MODERN TECHNIQUES:** database, on line and communications systems; high standards
- ☐ **FORMAL TRAINING:** a planned programme to enhance your skills
- ☐ **PURE ANALYSIS:** with a good proportion of development work, entirely in London
- ☐ **VARIETY:** mainframe, minis and micros; projects ranging from small to very big; team or individual responsibility
- ☐ **PROSPECTS:** very sound, in a busy installation, with ample new projects and opportunities for advancement.

This opportunity will interest either

- ☐ **SYSTEMS ANALYSTS** with upwards of two years' analysis experience (the application background is not critical, as our clients will provide retraining where necessary), or
- ☐ **ANALYST/PROGRAMMERS** who wish to move to systems analysis work.

If you feel that a move to a major, up-market installation would help your career, please ring us in confidence for a talk, quoting ref. 191. If it is more convenient for you to ring outside office hours, your message will be recorded.

(7710)



EDP SYSTEMS 01-637 5796
52-53 Margaret St. London W1N 7FF

*We've got a Proposal for
you on Valentine's Day!*

At the Lorient Cheese & Wine Party

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That's why this is a unique opportunity for you to call in to the Lorient Cheese and Wine Party, at Seftons Bar, (opposite Marks & Spencer), Corporation Street, Manchester, from 5.30p.m.-9.30p.m., on Tuesday 14th February. Find out all you need to know about computer contracting at all levels-with Lorient.

You needn't just take our word-some of our highly satisfied existing Contractors will be on hand to give you their side of the success story.

So, come along to the Lorient Cheese & Wine Party. We're sure you'll find we have an attractive proposition -because we've got what you're looking for.

Lorien
COMPUTER SERVICES LTD.
We've got it!

Recruitment Consultants, OCS House, Barrow Road, Leeds LS2 1MG, Tel: LEEDS (0532) 454011

Dixons

As the next stage in their development of d.p. facilities Dixons, the well known electrical retailers, are about to implement an IBM 4381 computer running under MVS. The machine is due for delivery in May 1984 and this decision has created a requirement for the following personnel:

TECHNICAL SUPPORT MANAGER

circa £18,000pa plus car and excellent benefits

Based at the Operations Centre in Stevenage, the Technical Support Manager will report to the Computer Centre Manager and will have line responsibility for the day to day support of a mixed machine environment with a large point of sale network. Duties will include the management of 4 Systems Programmers, two of whom will be experienced systems programmers who will be retraining for IBM. The successful candidate will face a major challenge in implementing the new machine and will be heavily involved in advising senior management about establishing an IBM environment.

Applicants should be able to demonstrate good management skills, a capacity for problem solving and the ability to communicate their ideas effectively. Previous experience of establishing a systems support role within an MVS/CICS environment is essential and previous knowledge of networking and machine linking would be a distinct asset.

2 SENIOR SYSTEMS PROGRAMMERS

circa £15,000pa plus excellent benefits.

Reporting to the Technical Support Manager, the Senior Systems Programmers will be involved in supporting the operating software of the IBM 4381 machine. One of the successful candidates will have a major responsibility for the MVS operating system and the other for the CICS environment, and experience gained in either or both of these areas is essential. A knowledge of database systems also would be desirable.

These positions represent an exciting challenge for systems programmers to develop their careers in a green field situation. The successful candidates will have the satisfaction of using their problem solving skills to make a significant contribution to Dixons future d.p. developments.

THE ENVIRONMENT

Machines: IBM 4381 Model 2
Tandem
ICL Point of sale network

IBM Software: MVS/JES 2
CICS
VTAM/NCP
RACF
TSO/SPF

RELOCATION EXPENSES WILL BE PROVIDED WHERE NECESSARY FOR THESE POSITIONS.

For further details please phone Chris Morrow of Total Selection who have been retained to advise on these appointments.

**TOTAL
SELECTION
LIMITED**

388 CITY ROAD LONDON EC1V 2QA

01-837 0451

See it in life

Widen your Horizons...

In 1984 our Client will be continuing with a major programme to extend their operations further across growth industries. They are working now on 'leading edge' software and hardware to develop solutions for a wide range of applications. Their horizons are expanding as fast as technology.

Project Leaders to £14K Package + Benefits Central London

To lead large bespoke or application package development projects. Positions involve control of all aspects of application software development from initial client contact to implementation.

Applicants should have at least five years' DP experience with a background in COBOL or BASIC. Some previous supervisory experience is essential.

To maintain their growth they require additional personnel. They are looking now for people who want to develop their skills. They offer exciting new opportunities to become involved in a range of projects and have the resources to see them through. They could provide the chance you have been seeking to develop your career and widen your horizons.

Software Engineers to £12K Package + Benefits Central London and West Midlands

To help develop software for intelligent terminal products in new business applications areas. The systems utilize advanced networking techniques that will interest candidates with communications software experience.

Applicants should be experienced in ASSEMBLER and/or PASCAL and should enjoy working on innovative developments which shortly will include voice recognition technology. A degree of client contact is expected.

UNIX® Specialists

£ attractive and £ negotiable

London West Midlands Leeds Edinburgh

To provide technical consultancy services to customers implementing 'leading edge' computer systems supporting UNIX software.

Applicants should have in-depth experience of UNIX or its derivatives and enjoy a high degree of end-user contact.

Programmer Analysts to £12K Package + Benefits Central London

To work on the design and coding of customer applications. The positions will involve some client contact. Applicants should have at least two years' experience with a background in ASSEMBLER or 'C'. Appropriate training will be given where necessary.

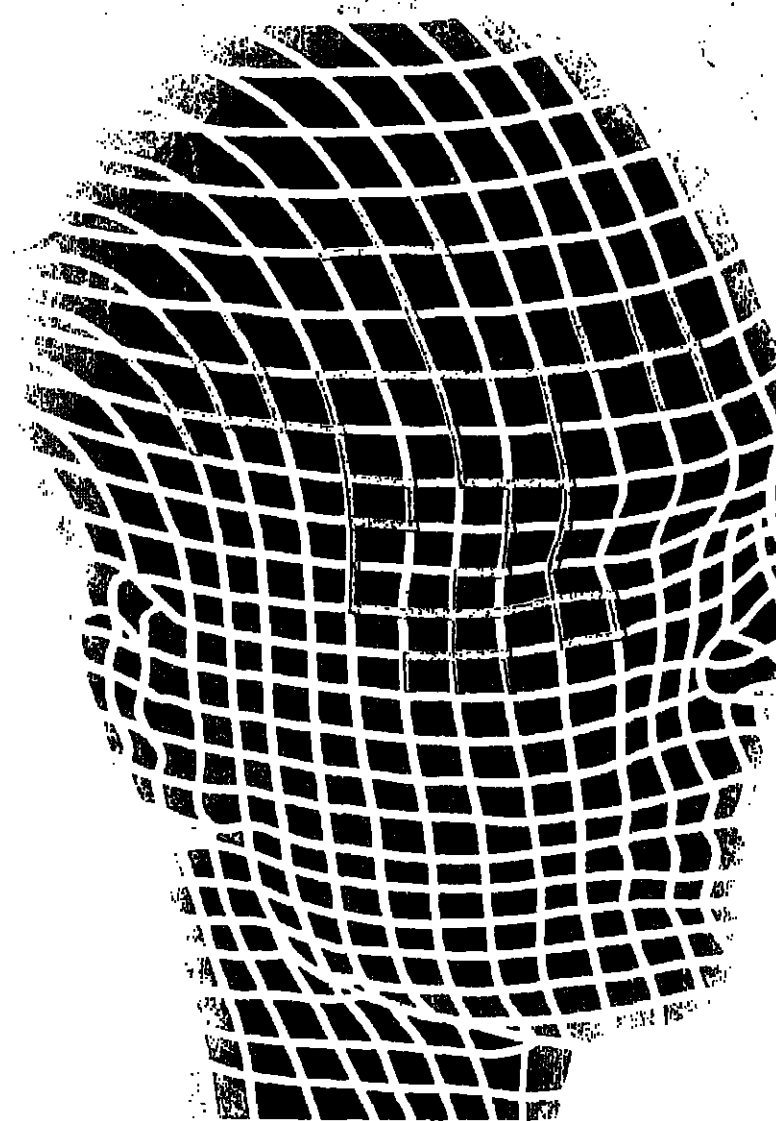
In addition to the basic salaries, which will be reviewed in June, the Company operates a twice yearly bonus scheme based on Company profits. Also there is a wide range of benefits including a non-contributory pension scheme, a private medical insurance plan and a holiday discount scheme.

Instructors to £11.5K Package + Benefits West Midlands

To assist in extending a range of internal and external training courses to include operating systems and high-level languages. Experience specifically in UNIX, 'C', PASCAL, BASIC or COBOL would be desirable.

The positions offer scope for candidates to undertake training assignments abroad as required. Suitable candidates without teaching experience will of course be trained.

In the first instance applicants should telephone 01 935 0671 and ask for John Pitt, Senior Consultant at the London offices. Initial interviews will be arranged at the appropriate SCR regional office, at which time further information about the Company and the appointment will be made available.



Berkshire

If you are interested in becoming involved in some of the most exciting applications of modern technology — READ ON.

We are seeking a number of talented software engineers to act as Project Leaders and Senior Programmers in the development and implementation of a wide variety of real-time manufacturing based systems for the MARS Group of companies throughout the U.K. Taking projects from inception to final implementation, you will apply your undoubted technical skills to the development of complex modern communications, process automation, and factory information systems.

Ideally we are looking for honours graduates, up to 32 years of age, who are keen to progress their careers in this fast moving and dynamic international group of companies. You must possess experience of at least two of the following:

1. PDPIRSX
2. PASCAL/CORAL/RTL2
3. Industrial applications.

To £17,000 p.a.

Successful applicants will be given full training in VAX/VMS where necessary.

In the first instance please telephone the number below quoting reference 0807 or clip the FREEPOST coupon and by return you will receive an application form and company profile.

By return of post, please send an application form and client company profile to:

Name: _____

Address: _____

Home tel. no.: _____

Business tel. no.: _____

(Used with discretion) 0807

COMPUTASTAFF

FREEPOST, London SW1H 9BR. 01-222 6722 Telex: 894364

MARS GROUP SERVICES

Network Facilities Manager

To £13,000 + Car

We wish to recruit a Network Facilities Manager to be responsible for all aspects of communications within a new subsidiary Company in Bristol. This position is at a high level within the Company and represents a challenging and progressive opportunity, consequently we seek a true professional with sound experience and high levels of self motivation.

You are probably in your late 20's, with a background that includes experience in an Operations/Comms capacity within an in-house installation, very likely enhanced by time spent in a DP Services Organisation. Certainly, your career has been moving towards a specialisation in Communications and Networking.

Consequently, you now feel ready to assume a responsible position to reflect your experience, within a new, sophisticated real-time facility, yet retain a desire to maintain a 'hands on' involvement with both Terminals and Comms equipment.

We regard your Comms knowledge as the key factor and do not place importance on any specific hardware bias. We do however, wish to appoint an individual with the character and ability to liaise effectively with Senior Management, Users and Suppliers.

Our Comms Network will comprise of around 200 terminals utilising state of the art techniques such as the British Telecom KiloStream service to various processing centres.

To apply, contact our Advising Consultant, Ian Mason, on 021-236 8781 or at home on 021-353 5721 (7.00 - 9.00 p.m.) All applications will be received in strict confidence.

Bristol

Technical, Sales & Management Appointments

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Queensway, Birmingham B3 3JY
021-236 3781

NORTH
International House, 84 Deansgate
Manchester M3 3EE
061-833 0427

BELGIUM
Avenue Louise 327
Boite 4, 1050 Brussels
010 322-840 7151/771

HOLLAND
Willemstraatweg 92
1071 H.M. Amsterdam
010 3120-780847

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021-236 3781

NORTH
International House, 84 Deansgate
Manchester M3 3EE
061-833 0427

BELGIUM
Avenue Louise 327
Boite 4, 1050 Brussels
010 322-840 7151/771

HOLLAND
Willemstraatweg 92
1071 H.M. Amsterdam
010 3120-780847

Tomorrows Software In Your Hands

Application Software Manager To £20,000 plus Car

WEST HERTS plus RELOCATION

With the merger of two of the U.K.'s leading retail automation manufacturers, our client is now the largest British company in the field of data capture and order entry systems. The key to their success lies in their response to the ever changing market needs by providing a "total solution" approach employing systems design, portable equipment, application software, communication systems and project management. The company specialises in the provision of systems for major manufacturers and distributors of consumer goods.

A vacancy exists for an **Application Software Manager** to play a vital role in the Company's increasing commitment to the development of an already comprehensive product range.

The primary objective will be to lead a team of designer/programmers in the design, implementation and proving of sophisticated application software for all major customers. Responsibilities will include all aspects of team management, project & resource planning and identification of new software systems for future products. The first priority will be, as always to provide the best possible service to the customer.

Applicants should possess strong managerial skills, sound commercial awareness and a broad technical background including 'hands on' design & programming ideally in the field of microelectronics. Candidates who are sales orientated, energetic and adaptable should be able to demonstrate the maturity and professionalism that a position of this importance demands.

For further information please telephone our consultant David Drake or send a detailed C.V.

MKA SEARCH INTERNATIONAL LTD.
(A DUPONT COMPUTING COMPANY)

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AMERSHAM
BUCKS. HP7 0AB
Tel: (02403) 28866
EVENINGS
DAVID DRAKE HOME:- 0494 785208
Offices at: Worcester (0905 612261)



SA

17701

ANALYST PROGRAMMERS to £11,000 p.a. PROGRAMMERS to £9,000 p.a.

Due to continuing demand for their software services our client, an established software house, has an urgent requirement to recruit analyst programmers and programmers to work on a variety of commercial projects.

CICS/DL1 MINIS OTHER MAINFRAMES

We would be particularly interested in hearing from people who have any of the skills listed above and would stress that our clients can offer an excellent career path which will combine development of both technical skills and managerial and personal qualities. In addition successful candidates will enjoy the challenge of working on a wide variety of machines in different commercial environments.

Training will be offered to suitable applicants to enable them to work on software or hardware with which they are unfamiliar.

CENTRAL LONDON

For a discussion of these opportunities please phone Chris Morrow on 01-837 0451 during working hours. An information pack about our clients will be sent to interested candidates.



388 CITY ROAD LONDON EC1V 2QA

01-837 0451

17672

"I never realised a register would have people searching out a job for me."

Many of them don't. But Lansdowne Appointments Register does. For instance Ray, our DP Director, will be scanning the Register every day for you on his 10-megabyte computer. Richard, Graeme, John, Sandra, Robert of our job-search force will be on the phone. Keith, our Regional Director, will be talking face to face with employers.

The minute your profile form arrives at Lansdowne all these people and more will be actively searching for vacancies that suit you.

Searching day in, day out. In just 3 days, one Lansdowne job-seeker was approached by 27 employers. That's because the brief Lansdowne profile form tells employers just what they need to know to pick you out for a job offer - but no more than that.

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Lansdowne Appointments Register

To Stuart Tait,
Lansdowne Appointments Register,
Park House, 207-211 The Vale,
London W3 7QB.

Please send me a Lansdowne Appointments Register job-finding pack.

NAME _____
JOB TITLE _____
ADDRESS _____

London & South East

IBM COBOL and/or PL-1

£7,500 to £10,000
12 months or more experience gained in any environment to be trained in CICS and DL-1 on IBM 4300 under DOS/VSE (shortly to be upgraded to MVS). Career prospects and progression into analysis in fully online installation.

Junior IBM Systems Programmer

£9,000 to £11,500
Applications ASSEMBLER or COBOL programmer with some experience of CICS will be offered chance to move into Systems work on IBM 4300. 6-12 months exposure to CICS required with around 18 months total experience.

System 34 or 38 RPG

£9,000 to £15,000
Want to gain valuable System 38 RPG-3 experience? Become involved in "State of the art" System 38/IBM P.C. comms? The automated office applications areas? 1 year experience minimum!

The above positions represent only a fraction of the job opportunities on our files. If you do not see a suitable opening, please call and discuss your requirements with:
BRUCE HARRINGTON Days: 01-630 1433
Evenings (after 7p.m.): 01-701 5920

DEC BASIC +, +2

£8,000 to £14,000
Move into Systems or Analysis work on PDP 11 and VAX equipment and learn Dataline. At least 18 months experience on any DEC hardware. All areas.

CICS Programmers

£10,000 to £17,000
All areas! Programmers with online COBOL, PL-1 or ASSEMBLER (upwards of 18 months experience) are required for positions in Manufacturing, Consultancy, Banking, Insurance and Commercial sectors, on both MVS and ILLS hardware.

RPG-2 Senior Programmer

c. £11,000
A good knowledge of RPG-2 gained on any machine is required for varied mainframe environment, running fully online commercial systems. 2 years + experience required for this step towards a more responsible role.

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COMPUTER SERVICES LTD.

Lorien Computer Services Ltd.,
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We've got it!

PROGRAMMER

HP COBOL c.£9,500

My Client is an International Marine Insurance Company based in Central London. They currently utilise an HP 3000/44 but expansion plans mean a probable upgrade to a 3000/66 in the future. Due to the increasing workload they wish to appoint an experienced Cobol Programmer.

Applicants should have a minimum of 18 months' commercial Cobol to include nine months' HP 3000 exposure. They should also be effective communicators as there will be a considerable amount of user contact. The successful candidate can expect to work on a variety of new developments as well as existing systems with career progression assured through to Senior Programmer. The department is using the latest software tools and full training will be given where necessary.

If you are self motivated and would enjoy working in a small but vital team, contact Mike Harmer for further details.

Apex Computer Recruitment Ltd.

404 4821

59 Gray's Inn Road
London WC1X 8TL
Tel: 01-404 4821

RUGBY SENIOR ANALYSTS/ PROGRAMMERS

£11,000 p.a.
IBM 4341/2

Required to be senior members of a small team developing complete automation facilities. Desirable experience - CICS/COBOL any data base. Required characteristics - desire to use computer effectively, drive to implement good solutions to business requirements.

Generous relocation expenses.

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Personnel Department
Clayton Dewandre Holdings Ltd.
90 Newbold Road
Rugby
CV21 2NL

177421

CONTRACTORS

IBM

IBM DOS MANTIS COBOL ANALYST/PROGRAMMER
IBM CICS SYSTEMS PROGRAMMER
IBM DL1 SYSTEMS PROGRAMMER
IBM DB2 COBOL PROGRAMMER
IBM MANTIS COBOL PROGRAMMER
IBM 4300 DOS PL1 ANALYST/PROGRAMMER
IBM 4300 DOS MVS PL1 ANALYST/PROGRAMMER
IBM 4300 DOS MVS TSO FORTRAN PROGRAMMER OR PROGRAMMER/ANALYST
IBM 4300 DOS RPG 2 ANALYST/PROGRAMMER
IBM DB2 COBOL DATABASE ADMINISTRATOR OR DESIGNER
IBM PL1 JSP PROGRAMMER/ANALYST + ANALYST/PROGRAMMER
IBM VM/CMS FORTRAN PROGRAMMER AND ANALYST/PROGRAMMER
IBM JSP COBOL PROGRAMMER
IBM TOTAL SYSTEMS DESIGNER
IBM MVS DB2 SYSTEMS ANALYST
IBM PL1 MVS DB2 PROGRAMMER
IBM PL1 CICS DL1 PROGRAMMER AND ANALYST/PROGRAMMER
IBM SY28 RPO3 PROGRAMMER WITH SY24 MACPDS experience
IBM MVS CICS SYSTEM PROGRAMMER WITH ACB11
IBM DB2/MVS COBOL CICS PROGRAMMER

IBM COBOL CICS OR DL1 SYSTEMS TESTING EXPERIENCE
TECHNICAL CONSULTANT - URGENT
CONTACT EDDIE LESTRADE ON: 0442 40761

ICL

ICL VME IDMS SENIOR PROGRAMMER (SOUTH EAST ENGLAND)
ICL COBOL PLAN PROGRAMMER (SOUTH EAST ENGLAND)
ICL VME IDMS TPMS PROGRAMMER + ANALYST/PROGRAMMER
ICL VME IDMS TPMS COBOL ANALYST/PROGRAMMER
ICL VME IDMS COBOL PROGRAMMER
ICL VME IDMS COBOL PROGRAMMER + ANALYST/PROGRAMMER
ICL DRS 20 CIB COBOL PROGRAMMER + ANALYST/PROGRAMMER
ICL 2800 COBOL VME IDMS TPMS ALL LEVELS URGENT
ICL SY28 ASSEMBLER PROJECT LEADER + PROGRAMMER
ICL DRS PASCAL C PROGRAMMER (MANCHESTER)
ICL BUSINESS CONSULTANTS DRS BACKGROUND - MANCHESTER
ICL 2800 COBOL SYSTEM TESTERS
ICL 1800 PLAN PROGRAMMER
ICL 2800 SCIENTIFIC FORTRAN
ICL MICRO UNIX PROGRAMMER
ICL M25 TIME TP COBOL SENIOR ANALYST/PROGRAMMER
ICL 2800 VME COBOL DB2/TPS CONSULTANT
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ICL DRS (POINT OF SALE TILLS) COBOL - ANALYSIS

OVERSEAS-USA

PROJECT LEADER
7-10 YEARS PRIME OR DEC VAX OR SUPERMINI
DEGREE REQUIRED OR EQUIVALENT MFTD IND. EXP
REQUIRED TO START YESTERDAY
SENIOR PROGRAMMER/ANALYST PRIME 3-5 YEARS MFG MANUFACTURING BACKGROUND
COBOL, FORTRAN, PRIME INFO (BASIC)
PLEASE CONTACT JOAN LOVEJOY ON: 0442 40761

ATTENTION: NORTHERN ENGLAND

IBM DOS/OS COBOL CICS DL1 (URGENT) PROGRAMMER
Z80/Z8000 C/PASCAL ASSEMBLER ANALYST/PROGRAMMER
PDP 11 RSK11/M MACRO 11 CORAL PASCAL SOFTWARE ENGINEERS
DEC 03000 CORAL FORTRAN ANALYST/PROGRAMMER
ICL VME IDMS TPMS COBOL PROGRAMMER
VAX VMS COBOL PROGRAMMER
SCOTLAND URGENT
SENIOR SOFTWARE ENGINEER (COMMS EXPERIENCE) ANY HIGH LEVEL LANGUAGE
PLEASE CONTACT EDDIE LESTRADE ON: 0442 40761

OTHERS

SYFA SYBOL ALL LEVELS
UNIVAC 1100 JACKSON COBOL PROGRAMMER
VAX COBOL PROGRAMMER + ANALYST/PROGRAMMER
PDP 11 RSK11/M (ANY)
NOR TOWER UNIX COBOL (ANY)
UNIX C PROGRAMMER
PDP 11 RSK11/M MACRO 11 BANKING EXPERIENCE PROGRAMMER + ANALYST/PROGRAMMER
MERS
FOCUS (ANY) URGENT
PDP 11 VAX VMS PASCAL PROGRAMMER
BIT SLICE EXPERIENCE HARDWARE ENGINEER
M8000 ASSEMBLER/PASCAL SOFTWARE ENGINEER
VAX MASCOT CORAL 66 ANALYST/PROGRAMMER
WANG VS RPO 2 PROGRAMMER
HYVILL 66 IDMS PROGRAMMER + ANALYST/PROGRAMMER
HP2000 COBOL IMAGE QUERY ANALYST/PROGRAMMER
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Computer Search and Selection,
8th Floor, Carat House,
Dingwall Road, Croydon, Surrey CR0 9XE.

Computer Search
& Selection

DIGITAL SYSTEMS MICRO AND MINI COMPUTERS

Aramco is the world's largest oil producing company. At oil fields, refineries and other process plants throughout the Kingdom, the company is operating a very wide range of computer-based process control systems and other digital electronics instrumentation. Additional Technicians are now needed for troubleshooting maintenance and repair, both offshore and onshore.

SENIOR TECHNICIANS & TECHNICIANS

c. £14,000 - £17,000 pa
Apprenticeship plus a minimum of 2 years' experience on the maintenance and repair of computerised process control systems and instruments.

SAUDI ARABIA

These are computer appointments offer open ended contracts with the usual tax advantages. The excellent range of benefits include low rental accommodation, fully furnished and an excellent salary and a U.K. base with company paid air fares, free medical, dental and good sport and recreational facilities.

Please write with full cv to: Webb-Whaley Associates Limited, International Recruitment Consultants, 49 Kensington High Street, London W8 5NG. Tel: 01-51 105



partners in progress

HIGH TECHNOLOGY RECRUITMENT ASSOCIATE

Korn/Ferry International, a major international executive search consultancy with 42 offices worldwide is seeking a young Associate to join its London-based High Technology Division, which specialises in the recruitment of senior level executives for a wide range of high technology clients and for companies needing E.D.P. specialists.

The position involves considerable desk and telephone research on an industry basis and the supply of high level management personnel. It is essential that the Associate is a graduate with experience in the high technology field. He/she must be highly literate and have strong interpersonal skills.

A salary circa £10,000 will be paid, though a higher figure could be considered for an outstanding candidate. There are excellent career opportunities within the company.

Applicants should apply in writing with a full cv to:

Miss Helen Gordon-Potts
Korn/Ferry International
2/4 King Street
St James's
London SW1

We put more challenge into software

CONTRACT OR PERMANENT — MAKE US YOUR FIRST CHOICE

Our success as a software house is reflected in the range and quality of positions we offer for contract or permanent staff. Our future in the international systems and software world is impressive and your career enhancement with us will be impressive too, to project management and beyond. Here are some of the positions on offer with some of our clients — major commercial organisations.

PL1, IMS/DB pref. CICS and MVS CORAL 66 MANTIS COBOL DL1, CICS UNIVAC 1100 RPG 111, IBMS/38 VM or MVS COBOL, PRIME VM/CMS Texas Instruments PL1, MVS, CICS, GRAPHICS ACCOUNTING IV Telecoms or Message Switching exp., pref. CORAL, PASCAL, INTEL	Senior Programmer Programmer Programmer Programmer/Analyst Programmer Systems Programmers Programmer Programmer Systems Programmer Programmer	London H. Counties Middlesex Surrey London Essex Hants Suffolk Essex London London South York London
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* Excellent contract rates/salaries * Full range of benefits
* Opportunity to work on challenging contracts throughout UK, Europe, Middle East and possibly USA.

Please contact:
Tangent Computer Services Ltd.
Falkfield House, Falkfield Road,
Brentwood, Essex CM9 4LE.
Tel: Brentwood 02777 25577
(24-hour answering service)

tangent

success in the Software world

PLOTTING THE FUTURE

Our client Calcomp, one of the world's largest suppliers of computer graphics hardware and software, enjoys the strength and security of a market leading position. With over 20 years experience in the field, Calcomp has a proven track record of innovation and growth.

Calcomp UK is expanding its Southern and Midlands bases in the Thames Valley and Sheffield and seeks sales professionals with any experience in computer hardware and software. The position involves a high level of responsibility and a range of challenges. The role includes both personal and team selling, and the opportunity to work with the most technologically significant products in their field.

Calcomp UK is expanding its Southern and Midlands bases in the Thames Valley and Sheffield and seeks sales professionals with any experience in computer hardware and software. The position involves a high level of responsibility and a range of challenges. The role includes both personal and team selling, and the opportunity to work with the most technologically significant products in their field.

Sales Executive
Graphics Peripherals
Division - £16K-£21K
O.T.E. plus CAR

Opportunities exist in the graphics peripherals division for sales professionals with experience in the field. The role involves a high level of responsibility and a range of challenges. The position involves a high level of responsibility and a range of challenges.

Sales Manager Designate
Displays Division - £26K
plus CAR

This position is for an experienced sales professional ready to make the step into a divisional management role.

Full product training is given either in Europe or the U.S. and a substantial earnings guarantee is provided during the training period in addition to high basic salaries of up to £17K for the right senior people.

For further information, please telephone: BOB MILLER on 02163 28806 or 02163 28807 for our 24-hour answering service.

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(1774)

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Career profile Sloangate The Appointments Register

CW06

BACKGROUND INFORMATION PLEASE READ CAREFULLY AND PRINT IN BLOCK CAPITALS USING BLOCK LETTERS

SURNAME _____ FORENAMES _____

ADDRESS _____

TELEPHONE HOME _____

NATIONALITY _____

SCHOOL _____

EXAMS PASSED _____

UNIVERSITY ☐ COLLEGE ☐ OTHER ☐

DEGREE ☐ DIPLOMA ☐ CERTIFICATE ☐

SUBJECT(S) _____

PROFESSIONAL QUALIFICATIONS WITH DATES _____

LANGUAGES (FLUENT/SPOKEN) _____

YOUR FUTURE PLANS

DESCRIBE THE APPOINTMENT YOU NOW SEEK _____

INDICATE WHERE IN THE UK YOU WILL NOT WORK _____

WILL YOU WORK ABROAD YES ☐ NO ☐

WILL YOU TRAVEL IN THE UK YES ☐ NO ☐

COMPUTER EXPERIENCE STATE NUMBER OF YEARS EXPERIENCE IN EACH OF THE FOLLOWING

COMPUTER LANGUAGES _____

MACHINES USED _____

APPLICATIONS _____

PRESENT EMPLOYMENT

EMPLOYERS NAME _____

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JOB HELD _____

JOB RESPONSIBILITIES _____

SALARY _____

IF YOU ARE NOT A UK CITIZEN PLEASE SPECIFY DOCUMENTS STATING NUMBER WHICH ENTITLES YOU TO WORK IN THE UK _____

COMMISSIONS/BONUS _____

EMPLOYMENT HISTORY LIST LAST TWO EMPLOYERS

EMPLOYERS NAME _____

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Reference: GHJ/1

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Reference: WC/3

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£12,000 c £13,500 to £12,000 c £11,500 £12,000 £11,000 to £14,000 to £10,000 to £10,000 to £10,500 c £10,000	IBM COBOL PROGS, DOS/VSE, CICS, pref MANTIS IBM COBOL PROGS, MVS, IMS DB/DC preferred IBM COBOL A/PROG, DOS/VSE pref. CICS or APL IBM COBOL A/PROG, DOS/VSE, CICS, DL1 IBM COBOL A/PROGS, MVS, CICS/DL1 but not essential IBM COBOL PROGS & A/PROGS, MVS, CP/M exp. pref. IBM JNR COBOL PROGS, DOS/VSE training given in CICS, DL1 IBM COBOL PROGS, OS/VS1, CICS, IMS/DB useful IBM COBOL A/PROGS, MVS, CICS/DL1 but not essential IBM COBOL PROG, ADABAS & NATURAL pref.	- MIDDX - SURREY - C. LONDON - SUSSEX - C. LONDON - W. LONDON - MIDDX - SURREY - BERKS - GLOUCS - C. LONDON
to £10,000 £9,500 to £10,000 to £12,000	IBM PL1 PROG, MVS, TSO, IDMS pref. IBM PL1 PROG, DOS/VSE, CICS training given IBM PL1 PROGS, DOS/VSE, CICS, pref SHADOW IBM SNR PL1 PROG, VS1 & MVS, CICS essential, VSAM	- MIDDX - HERTS - C. LONDON - HERTS
to £15,000 £14,000 £8,000-15,000 £13,000 £11,500	IBM SYST/ANAL, FOCUS pref, good commercial exp. IBM SYST/ANAL, Financial background, CICS useful IBM SYST/ANAL, good commercial exp. with Mgt. Systems IBM SYST/ANAL, Manufact. and/or Financial Systems exp. IBM SYST/ANAL, PROG background, Design and Implement exp.	- SURREY - W. LONDON - ESSEX - N. LONDON - KENT
c £14,000 to £18,000 c £11,500 to £17,000 c £12,500 £10,500 min c £10,500	IBM RPG2 A/PROG MAAPICS essential. Management role IBM RPG2/3 A/PROGS Superior Consultancy role IBM RPG2 P/ANAL 2 yrs. + exp. training in banking systems IBM RPG2 A/PROG min. 18 mths. banking KAPITI or MIDAS pref. IBM RPG2 A/PROG MAAPICS or Manufacturing background IBM RPG3 P/ANAL 8 mths. RPG3 with 3 yrs. + programming. IBM RPG3 PROG 2-3 yrs. programming exp. with some RPG3	- MIDDX - C. LONDON/MIDDX - CITY - CITY - C. LONDON - KENT - C. LONDON
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Sales Support - Microcomputers

Opportunity to join a new fast-growing company - based in Oxford Street, London - affiliated to a successful microcomputer group in the U.S. dealing with leading international brand names. Suitable candidate should ideally be a young graduate with one or two years working knowledge of microcomputer systems. Experience in sales, technical support and customer liaison in relevant markets and some knowledge of computer programming/accounting would be desirable. Excellent opportunity to train and grow with company. Salary £10,000 NEG.

Please write with C.V. to A. Khoury, Oryx Systems,
c/o 85 Pier House, Oakley Street, London SW3 5NH.



Network Support with Tymshare

Tymshare Network Systems, a world leader in Packet Switched Data Communications Networks, is inviting applicants for the position of Network Operations Supervisor. Duties include: Operations, Software and some Hardware Support for a number of installed data networks. Close liaison with customers will feature strongly. Applicants (28 years or older, and willing to be located within 20 miles of Wembley) should possess at least 5 years experience of Hardware and Software Support in either the DataComs or Computer industries. Academic qualifications would be an advantage. Salary is in the region of £13,000 with the use of a company car.

Vacancies also exist for Field Engineers.

CV's should be sent to: Mr M Walters,
Tymshare Network Systems, Station House,
Harrow Road, Wembley, Middlesex HA9 6EB.

(7647)

Unix Programmers

The Computing Division of the Rutherford Appleton Laboratory is involved in developing Unix on several systems as well as providing a service on others. Major Unix developments are taking place on both ICL Perq single user systems and on the new GEC 63 series machine. Unix is also used on a range of systems that include PDP 11/70, VAX 11/750 and an IBM 3081.

Vacancies exist for Unix Programmers to develop and support servers, troff backends for both a colour microfilm recorder and a laser printer and both wide area network and local area network systems.

Applicants should have a degree in Computer Science or related subject and have some experience of Unix.

Depending on qualifications and experience, salaries will be within the following scales:-

Scientific Officer £5,682-£7,765
Higher Scientific Officer £7,149-£9,561

Appointment as a Higher Scientific Officer requires a good honours degree and several years experience in this field.

Some assistance with the expenses incurred in house sale/purchase may be available.

The Laboratory is a friendly community with its own restaurant and sports facilities nearby. We offer excellent working conditions and benefits include a local transport service and generous holidays.

Contact: Recruitment Office, Personnel Group,
Rutherford Appleton Laboratory, Science and
Engineering Research Council, Chilton, Didcot, Oxon
OX11 0QX, or telephone Abingdon (0235) 445435,
quoting reference VN204.

Closing date for applications: 1st March 1984

(7686)



Rutherford Appleton
Laboratory

HONEYWELL PROGRAMMER NEW POSITION - NEW SYSTEM DPS 7 COMPUTER

MEDICAL INSURANCE AGENCY - MAJOR INSURANCE BROKERS

We are looking for an ambitious programmer to join our computer team who are developing a new database client accounting and information system. You should have up to two years' experience on Honeywell equipment ideally on L64 or DPS 7 hardware, using GCOS, COBOL, IDS2 and TDS. You will join a small team where everyone gets involved, so personality as well as the skills you can offer is important.

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(7671)

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We have an immediate need for a number of ICL Systems Analysts to work on a major six months contract in:

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(7668)

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VM SYSTEMS PROGRAMMER

MVS SYSTEMS PROGRAMMER

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CICS, DL/1 INDUSTRIAL APPLICATIONS ANALYST

DOS/VSE, CICS, DL/1 COBOL ANALYST

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MVS IMS/DB COBOL PROGS. (MARCH/APRIL)

370 ISO COBOL PROGRAMMER

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MICROPROCESSOR SIGNAL PROCESSING ENGINEER

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For details of these and other on-going requirements, please contact Lorraine, Lynne, Wendy or Tony at KPG, or contact Lorraine on Walton-on-Thames 245552 (evenings and weekends).

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(7714)

UNIVERSITY OF LIVERPOOL
Department of Computer Science

EXPERIMENTAL OFFICER

to join small team which provides software and hardware support for teaching and research. Experience of local area networks, assembly language programming, UNIX, Algol 68, or Pascal particularly welcome.

Candidates should possess an Honours degree in Computer Science or have appropriate equivalent professional qualifications.

Salary within range £5,310-£9,530 per annum.

Application forms may be obtained from the Registrar, the University, P.O. Box 147, Liverpool L69 2GB. Closing date: 15/2/84.

London Borough of Ealing

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Ealing College of Higher Education
St. Mary's Road, Ealing W5
£7,815-£8,520 p.a. inclusive

Required to join a team of two other programmers in providing a range of services to 'academic and administrative users. The centre provides an interactive computing service on Prime 750/850 as well as facilities on BBC and North Star micro computers.

Applicants should have a relevant degree and at least two years' practical experience, and preferably a good working knowledge of statistics.

Please quote reference E3088. Closing date: 17/2/84. Application forms and further details from the Chief Administrative Officer (ID/100), Ealing College, St. Mary's Road, London W5 8NF. Telephone: 01-879 4111.

(7647)

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(7660)

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Our Client is a subsidiary of a major Computer Services Group whose principal activity is the sale and distribution of microcomputer products. Established for 16 years, they can demonstrate high profitability and excellent growth.

The introduction of the IBM PC and exclusive distributorships for key IBM PC enhancement products is supported by a highly qualified team of technicians and engineers.

Our Client now seeks an additional pre and post Sales Support Engineer, qualified to at least HND level, with sound micro hardware and software experience together with practical experience of mainframe communications. An element of European travel may be required for this post.

A workshop based, Microcomputer Technician, with at least three years component level repair experience of Micros and peripherals, a knowledge of TTL logic and both floppy and hard disk technology will also be required to supplement a highly skilled team of microcomputer technicians.

Salary will be no obstacle to the right Candidates, and on offer is an excellent benefits package with excellent career prospects in a rapidly expanding environment.

For further information, telephone Trevor Money on 021-236 3781 (24 hour answering service) or 021-449 1870 (Evenings and Weekends).

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021-236 3781

NORTH
International House, 84 Deansgate,
Manchester M3 2ER
061-833 0427

BELGIUM
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Boite 4, 1050 Bruxelles
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SELECT YOUR NEXT CAREER MOVE

CENTRAL LONDON £11,000-£13,000 ANALYST/PROGRAMMERS PROGRAMMERS

COBOL/CICS/DLI - Training
A leading IBM User based at a very accessible Central London site is seeking to recruit programmers and analyst/programmers for their IBM 4300 MVS installation. The company are currently developing a range of new financial systems using CICS and DLI and can offer excellent career development opportunities. Excellent benefits include a subsidised mortgage and a non-contributory pension. Ref W1

UXBRIDGE/WEST MIDDLESEX £10,000-£12,000 NEW IBM COBOL PROJECTS

Our client very conveniently situated near the A40/M40 in West Middlesex is seeking to recruit PROGRAMMERS and PROGRAMMER/ANALYSTS to work on the development of commercial on-line database systems on IBM MVS hardware. Training in on-line database techniques is available and candidates will need to offer at least two years' IBM COBOL. In addition to an excellent commencing salary the company are also able to offer an attractive range of employee benefits. Ref W4

BRACKNELL, BERKSHIRE TO £12,000 SYSTEMS ANALYSTS COBOL PROGRAMMERS

Located in Bracknell, very accessible from the M3 and M4, our client, a large IBM user, is seeking staff to be engaged on a wide range of new CICS/DLI based commercial projects. Programmers will need to offer at least two years' IBM COBOL, with training in CICS/DLI available, and analysts should be capable of taking a project through all stages of development. Ref W7

If you wish to apply for any of the above positions telephone or write now quoting the appropriate reference. DP Selection Services service clients in London and the surrounding counties. If you wish to discuss your career move requirements telephone one of our consultants for a confidential discussion.

dp SELECTION SERVICES
A member of the DP Support Services Group

HAMPSHIRE £10,000-£13,000 (+ Benefits) COBOL ANALYST/PROGRAMMERS

Several exciting career opportunities exist within this rapidly expanding IBM 4341 MVS environment where a new project development schedule has recently been agreed. If you can offer at least two years' IBM COBOL then training in CICS/DLI and MVS will be provided together with company benefits including low cost finance, a mortgage subsidy and a very attractive relocation package. Ref W2

SOUTH HERTFORDSHIRE £9,000-£13,000 PL/1 PROGRAMMERS ANALYST/PROGRAMMERS

PL/1 CICS and database projects are currently being developed by a major financial organisation using IBM MVS mainframes. You will need to offer at least two years' PL/1 experience in a commercial environment and the company can offer training to develop your technical and analysis skills. An excellent range of employee benefits are available including non-contributory pension and a subsidised restaurant. Ref W6

CITY OF LONDON TO £12,000 RPG/II - SYSTEM 38 - BANKING

A major international bank located in the City is seeking to recruit programmers for their System 38 installation. Candidates should offer at least eighteen months' programming experience with RPG/II training available for RPG/II programmers. You should be capable of progression to a programmer analyst role and an excellent Bank Benefits package will be offered including a preferential mortgage. Ref W8

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"We look forward to hearing from you."

CITY/CENTRAL LONDON TO £14,000 PROGRAMMERS & PROGRAMMER/ANALYSTS TANDEM - DEC VAX

If you can offer experience of systems and programming on TANDEM & DEC hardware, our client, a highly respected organisation developing new commercial and communications systems, can offer you challenging new project work. You will need to offer TANDEM TAL experience or DEC VAX ASSEMBLER and can look forward to receiving training to enhance your technical skills. Career development to system designer level exists and the company offer a range of attractive benefits. Ref W3

KINGSTON, SURREY £11,000-£13,000 SYSTEMS ANALYSTS

Our client, a very successful IBM user developing systems for the insurance market, now wish to recruit SYSTEMS ANALYSTS to take responsibility for new commercial/financial projects. These systems will utilise on-line and database software and therefore experience in these areas will be a great asset. If you are seeking a new challenge in systems development with a progressive, lively company then our client can offer you an excellent career opportunity. Ref W6

CITY TO £16,000 ANALYSTS - FINANCIAL/BANKING PROJECTS

A large financial institution based in the City is about to embark on a wide ranging development of systems for the Financial sector. (Senior) Systems Analysts are now sought to take project responsibility for systems which will require extensive user group liaison. Candidates must offer several years' systems experience preferably including IBM knowledge and will be capable of project leading. Ref W9

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(24 Hour Answerphone)

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Derwent Publications, a company at the forefront of scientific and patents information services and with a world-wide clientele, have a vacancy for an enthusiastic and innovative young programmer.

The successful candidate will be of at least 'A' level standard with about four years' commercial experience (or a graduate with two years' experience) of IBM/COBOL with MVS and TSO/SPF. Tasks will include assisting in the development of new project work, maintenance and support of existing applications and considerable liaison with external bureaux.

A competitive starting salary (neg. a.a.e.) will be paid and there is a range of other benefits. Career prospects are good in an expanding and increasingly important department of a flourishing business.

Write with full c.v. to:

Mr V. Lyon
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Derwent Publications Ltd
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LOCATION: GOUROCK SALARY: c.£7,500-10,000

Caledonian MacBryne Ltd., which is part of the Scottish Transport Group, operates all major ferry services in the Clyde and Western Isles and has its Head Office based at Gourock.

Following upon a decision by the Group to de-centralise its computer facilities the Company are now in the process of installing Hewlett Packard HP3000 computers. Applications developed will make use of the latest software development aids - IMAGE, TRANSACT and INFORM with programmes written in COBOL. Additionally Micro computers are being introduced and we plan to extend their use.

The Company is therefore seeking experienced and enthusiastic staff to form a new Computer Department of Gourock to undertake development of existing and new applications.

These new positions represent an opportunity to join an exciting phase of computer development. Applications are invited from experienced staff. Ideally, candidates should have an HP3000 background with COBOL experience but suitable training will be given as necessary.

Applications in strict confidence should be submitted giving details of experience, salary, etc. to:-

A. Douglas, Esq.,
Manpower Executive,
Scottish Transport Group,
Carron House, 114/116 George Street,
EDINBURGH.

EPOS SYSTEMS

We currently require five experienced Analyst/Project Leaders for major EPOS development projects. Career prospects are excellent.

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Ring David Mason Johns at
KPG now for an interview

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We are a young fast growing computer company specialising in technical computing, real time systems, including unique data acquisition capabilities and high performance graphic work stations.

To start our sales and support activities in the United Kingdom we are inviting applicants for the position of:

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The successful candidate will have many years of experience in the UK scientific/technical market, both OEM and end user, and is expected to hold a senior sales management position in his current company.

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This is an exceptional opportunity, not only because our client is an international manufacturer whose customer list looks like the 'Who's Who' of British industry, but also because it is a senior appointment that is the key to a unique departure in the marketing and installation of IBM based systems.

We are seeking an accomplished systems specialist, with a substantial record in project control and man management, who is truly conversant with IBM operating and database software, particularly VM/CMS. A high level of diagnostic skill is also essential.

The chosen candidate will be given the task of building a team of software specialists to trouble shoot at the implementation and operation levels and to support and train end-users. He/she will also be responsible for establishing a centre of excellence for IBM systems software support. The job will command national responsibility but will be located in the

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It is expected that the first two months will be taken up with comprehensive

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In order to be able to advise the company on its technical support strategy in anticipation of the new product launch in the spring.

This is a significant and senior appointment reporting directly to the head of Customer Services, and will attract a substantial remuneration package that is commensurate with the importance of this key appointment.

Money will not be allowed to get in the way of recruiting the right person for this job.

Please supply complete career details to Alex Mittlestrass (London) or Alan Williams (Lichfield) quoting reference MTB/024.

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You should have had at least 3 years hardware support experience on DEC 11, 70, VAX 750 and VAX 780 range of CPUs, have peripheral qualifications consistent with regional support capabilities and be prepared to enter a two year agreement or alternatively be

considering permanent residence in South Africa.

We are a well established international organisation who, in exchange for your qualifications, can offer a £15,000 p.a. package, benefits which include excellent career prospects, job satisfaction, excellent pension fund, medical aid and car scheme, a renewable contract or permanent post, return air fares and relocation allowance as well as initial accommodation.

If you would like to consider a move to sunny South Africa, in the first instance, telephone or write for an appointment to our consultant,

with details of your career to date, including any companies that you would not wish to approach. Interviews will take place in London on February 6th, 7th and 8th. Christopher Gill, JWG Advertising, 26 Wellington Street, London WC2E 4BB. Tel: 01-836 3932.



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To build, develop, technically maintain and modify as required, software systems in support of Data Centres throughout Europe. 3 years' IBM systems programming experience is required with extensive MVS involvement and one or more of the following: TSO, JES3, ROSCOE, IMS, ACFVTAM, RACF. Ref: 44185/CW.

System and Software Consultants to £15,000

These consultancy support roles provide a technical guidance and problem solving capacity to domestic and international users of the full range of IBM software products. The required experience is at least 2 years' OS and Assembler and a working knowledge of some of the following: MVS/SP, TSO, ISPF, FOCUS, JES3, RACF, ROSCOE, IMS DB/DC, ACFVTAM, DATAMANAGER, EASTRIEVE. Ref: 44186/CW.

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The International Data Centre in Bushey provides software systems support and development, batch and on-line processing and voice and message telecommunications facilities for operating divisions and subsidiaries. The network is substantial, extending throughout the UK and Europe, to Africa, the Far East, Australasia and the USA. IBM mainframes, including a new 9083, operate under MVS/JES3.

This is part of a major exercise to attract talented people looking for career development, security, extensive training and managerial prospects. Salaries and positions are just an indication of the areas and levels required. If you are an IBM specialist and believe you have experience and ability suitable for the company, we would like to hear from you.

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How to apply

Candidates should submit their CV, quoting the appropriate reference number, or complete and return the reply box or telephone for an application form to: A.D. Kelly, Hoggett Bowers & Partners, Sutherland House, 5/6 Argyll Street, London W1E 6EZ. Tel 01-734 6852. LOCAL INTERVIEWS WILL BE ARRANGED.

NAME	REF No
ADDRESS	

SOUTHWARK MICROTECH A MICROTECHNOLOGY TRAINING CENTRE

Southwark Council, plus a local charity and an international telecommunications organisation, are jointly sponsoring an MSC/DOJ-funded Information Technology Centre (ITC) which provides up to a year's training in the use and servicing of computers and related technology for 16- to 19-year-olds. The ITC will equip them with the necessary skills to get related employment and help them to keep it.

We are among the first centres of their kind and these opportunities provide an exceptional challenge. In order to help us maintain and promote this service and develop our team we need:

INSTRUCTOR

£8,382 to £9,087 (Scale 5)

You must be able to provide specialist training in the following areas: Software packages, programming and the operation of micro-computers.

The successful candidate will be required to motivate, assess and monitor the progress of young people of varying abilities in the use of information technology.

A sympathetic approach to young people and their problems is therefore essential.

This is a most demanding role which calls for considerable personal commitment and dedication; however, it can also be most rewarding to the right candidate. If you think you can handle it please contact Lesley Loizou on 01-928 8434 or write to:

Southwark Microtech
182/194 Union Street
London SE1 0LH

Last date for receipt of completed Application Forms: 24.2.84.

BRISTOL POLYTECHNIC Construction & Environmental Health Department

Part-time Research Assistant - Cost and Resource Modelling - Ref No R/173

A Research Assistant is required to assist in the development of computerised time cost models for multi-activity projects in the construction industry with major resource constraints on a 2 1/2-day per week basis, until the end of August, 1984.

The post would be suitable for graduates in mathematics, Computing, Building Technology or Civil Engineering. The ability to write computer software suitable for industrial/professional applications is essential. Previous research experience is desirable, but not essential.

SALARY SCALE: pro rata to £5,418-£6,123 per annum.

For further details and an application form, to be returned by 17th February, 1984, please contact the Personnel Office, Bristol Polytechnic, Coldharbour Lane, Frenchay, Bristol or Ring Bristol 656261, Ext 216 or 217.

Please quote Ref No R/173 in all communications.

LOUGHBOROUGH UNIVERSITY OF TECHNOLOGY

ROBOTIC PROGRAMMING

Applications are invited for the post of RESEARCH ASSISTANT to work on an SERC-sponsored project in off-line robotic programming. Candidates should be good honours graduates, preferably with some industrial experience. The appointee may be able to register for a higher degree.

The appointment will be for two years, with the first year at a starting salary of £5,745. Application forms and further details from John Middle, Department of Engineering Production.

Loughborough Leicestershire (7708)

LIVERPOOL HEALTH AUTHORITY ANALYST PROGRAMMER (STATISTICS)

(£8,670 to £7,404 per annum)

An enthusiastic, suitably qualified person is sought for this important post in the Health Authority's Information Unit. The postholder will be responsible for setting up a computerised statistical database together with an associated library programme. Further work will involve the development of planning-oriented applications for the computer, information systems and research.

Application form and job description available from the District Personnel Officer, Liverpool Health Authority, Ormeau House, Edmund Street, Liverpool L3 5ND. (Telephone 051-227 4300 ext 297). CLOSING DATE: 15th MARCH, 1984.

(7711)

IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY SYSTEMS ANALYST/PROGRAMMER (Administrative Computing)

Systems analyst/programmer required to assist the Administrative Computing Development Officer in the design and development of a new, fully integrated administrative computing system. The initial task will be to assist at the definition stage of a project on Registry computerisation followed by the design, program and test of portions of the system.

Proven success in the development of structured, fully documented software is necessary and experience in data base design and usage desirable. The ability to co-operate closely with Registry staff and to translate their operational requirements into user-friendly software is very important.

Initial appointment will be for 5 years. Salary in range £5,310-£11,815 per annum plus £1,188 London Allowance according to qualifications and experience.

Further particulars and application forms are available from the Personnel Secretary (01-585 8111 ext 2023) Imperial College, London SW7 2BZ. Closing date for receipt of applications - Friday 2 March 1984.

(7743)

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Harrogate Borough Council COMPUTER SERVICES OFFICER

Salary £12,408 to £13,728 per annum

The Council wish to engage, for this new post, the services of an enthusiastic data processing professional to assist in the formulation of the future strategy of the computer function, to investigate and evaluate the options and to co-ordinate the development and implementation of procedural information and control systems across all areas of the Authority.

Existing facilities include an ICL ME28, a range of local terminals (which is scheduled to be extensively expanded) and distributed computerised cash recycling facilities. In addition to which extensive use is made of the County Council's twin 2978 mainframe.

Applications are invited from persons with relevant qualifications (additional BCS or IDPM an advantage). Experience in telecommunications and related technologies desirable and a knowledge of ICL distributed systems and experience in Local Government would be advantageous. Assistance with resettlement expenses in appropriate cases and temporary housing accommodation may be available.

Application forms and further details are available from the Personnel Officer, Harrogate Borough Council, Council Offices, Harrogate, North Yorkshire HG1 2SQ. Tel: (0423) 68984 ext. 285. Closing date 24th February, 1984.

(7742)

TRENT POLYTECHNIC COMPUTING SERVICES

CHIEF SYSTEMS PROGRAMMER

(£10,761-£12,087)

To lead a team of four responsible for the smooth running of systems software on the central Polytechnic computers (DEC 2980, VAX and IBM System 380). Experience in system programming, low-level languages or communication networks, etc., would be advantageous.

Further details and form of application are available from the Staff Officer, Trent Polytechnic, Burton Street, Nottingham NG1 4BU. Closing date February 24, 1984.

(7707)

Somerset County Council EDUCATION DEPARTMENT Information Technology Centre, Somerset College of Arts and Technology, Collinson Centre, Taunton SENIOR SUPERVISOR and SUPERVISOR (KEYBOARD/OFFICE SKILLS)

Required as soon as possible for a new Information Technology Centre. The Centre, which is sponsored by the Somerset College of Arts and Technology under the Youth Training Scheme, is largely funded by the Manpower Services Commission with assistance from the Department of Industry. The aim of the ITC is to provide skills training for 30 trainees in the general areas of computing, electronics and microprocesses, which are relevant to technical and business applications.

The salaries for these full-time 37 hours per week posts will be:
SENIOR SUPERVISOR - £8,000 per annum
SUPERVISOR KEYBOARD/OFFICE SKILLS - £7,000 per annum

The Senior Supervisor will be responsible to the Manager and assist him in the further development of the Centre, and will also be responsible for instructing trainees in the practical aspects of microcomputer and microprocessor applications and in supervising the work of the four supervisors.

The Keyboard/Office Skills Supervisor will be responsible for instructing trainees in keyboard skills and modern office practices.

Applicants should have relevant and recent industrial/office experience with qualifications appropriate to the post and be fully trained in the use of the computer.

PRIORITY WILL BE GIVEN TO UNEMPLOYED APPLICANTS

Application form and further details available from the Chief Education Officer, Staffing N.T. Section, County Hall, Taunton (stamped addressed envelope please), Taunton, Somerset TA1 1AA. Closing date: 24.2.84.

(7681)

Hardware Instructor £10,000+

Nixdorf Computer, a world leader in computer systems and services, seeks a hardware instructor with the flair and imagination to run a new UK training operation for engineers.

This is a position requiring experience in a similar field as well as the ability to use initiative in developing the role accordingly.

The successful applicant will be based at Nixdorf's Hounslow headquarters and will receive upwards of £10,000 depending on relevant experience, plus the range of benefits associated with a major international organisation.

Application Software Instructor

Nixdorf Computer also has a vacancy for an able lecturer in computer studies who wishes to broaden his or her experience by joining a progressive manufacturer.

Teaching our wide variety of customers to use our comprehensive range of application software requires many qualities. Nixdorf offers an attractive remuneration package to someone with:

- A good understanding of business accounting
- Systems analysis and training experience
- The personality to establish good relationships quickly

Candidates with the ability and personality to fill these demanding posts should apply in writing with cv to Mr G Willis, Nixdorf Computer, 125-135 Staines Road, Hounslow, Middlesex TW3 3UB

**NIXDORF
COMPUTER**

In the UK and 33 other countries worldwide

FOR PROGRAMMERS OPPORTUNITIES IN COMMUNICATIONS £9-£13.5K Camberley, Surrey

Communications is the fastest growing and most exciting sector of the computer industry. Our client is continually demonstrating its expertise in the implementation of voice response, viewdata and associated communication and network systems. This has led to an impressive list of major companies throughout the UK and Europe who have chosen our client's products as the best available for their needs.

Opportunities have arisen for a Senior Programmer and Programmer to become involved in the development of exciting new communications products. Those seeking real responsibility will see projects through from feasibility to implementation and have the opportunity to provide some sales support to customers.

Working in a small, friendly and informal environment will ensure that endeavour and application are instantly recognised and subsequently rewarded.

Experience of communications software development is essential for the more senior position. Successful applicants will have:

- Experience of Assembler languages, preferably DEC MACRO 11.
- Minimum of 2 years software development.
- High level of motivation.

Company benefits include regular salary reviews, excellent career prospects, free family medical insurance, generous pension scheme and relocation assistance where appropriate.

For further details please telephone Keith Taylor on Reading (0734) 595346 or write enclosing full c.v. to our Reading Office.

Interviews will be held in London and Reading.

MCL

McCOURT COUSINS LTD.
Computer Recruitment Consultancy

27-29 Greyfriars Road,
Reading, Berkshire
Telephone (0734) 595346 (24 hours)

Chester House, 150 Regent Street,
London W1R 6FA
Telephone 01-439 6266

SCOTTISH WEST COAST HEALTH BOARDS

(a) Chief Computer Operator

£8,367-£10,277 per annum (after a qualifying period an annual allowance of £554 may be payable).

This senior post requires candidates with several years' experience of working at a supervisory level in a medium to large computer installation preferably with ICL 1900 or 2900 systems, utilising the George 3 or VME 2900 operating systems. A knowledge of telecommunications networks would be an advantage.

(b) Intermediate Programmer

£7,404-£9,025 per annum (after a qualifying period an annual allowance of £277 may be payable).

At least two years' relevant experience is required for this post. Experience of ICL COBOL and familiarity with the use of ICL software is essential. Knowledge of George 3 and/or VME 2900 would be an advantage.

Both posts are based in modern offices near the centre of Paisley, minutes from the motorway and mainline railway stations. The ICL 1903T computer system currently in operation is in the process of being replaced by an ICL 2865 system, providing concurrent use of VME 2900 and George 3 operating systems.

The Department services the Argyll and Clyde, Ayrshire and Arran, Dumfries and Galloway and Western Isles Health Boards in providing a wide range of financial services and as an integral part of the Information Services Division processes a comprehensive range of information for Health Care, planning and management. The Health Boards have a number of mini computers in Hospital Laboratories and administration and an expanding data communications network.

Application forms and further particulars regarding above posts may be obtained from the Area Personnel Officer, Argyll and Clyde Health Board, Gilmour House, Paisley PA1 1DU (telephone: 041-887 0121, extension 322) to whom completed applications should be returned not later than February 24, 1984.

(7768)

THE UNIVERSITY OF BIRMINGHAM

Administrative Data Processing Unit

The following staff are required:

DEPUTY DATA PROCESSING MANAGER

(£13,515-£16,925)

A high calibre professional to lead the payroll/personnel project group and to have overall responsibility for the co-ordination of developments within the unit. Wide experience of all aspects of data processing essential.

SENIOR SYSTEMS ANALYST

(£11,160-£14,125)

A Senior Systems Analyst to head developments in the student admissions and records area. A detailed knowledge of current on-line techniques is expected: previous experience in personnel record systems an advantage.

SYSTEMS ANALYST/PROGRAMMER

(£7,190-£11,815)

A well-qualified Systems Analyst/Programmer to improve cost control systems in the estates and buildings office. Minimum of two years' programming (preferably Cobol or Transact) and 12 months' systems analysis experience essential.

PROGRAMMERS

(£6,310-£9,875)

Additional Programmers are required, each normally to work within a specified project area. Minimum of 12 months' programming experience, preferably in Cobol, required. Salaries are subject to review in April.

Familiarity with HP equipment an advantage. Enquiries to Mr. A. Todd, Data Processing Manager (Tel. 021-472 1201, Ext. 3182). Further particulars and application forms, returnable by February 29, are available from the Senior Assistant Secretary, University of Birmingham, PO Box 363, B15 2TT.

(7778)

MICROELECTRONICS EDUCATION PROGRAMME MERSEYSIDE WITH CHESHIRE REGION REGIONAL INFORMATION CENTRE

DEPUTY DIRECTOR

Salary scale Lecturer II/Senior Lecturer £7,215-£13,443 p.a.

A temporary post, funded by the MEP, for the period April 1, 1984 to March 31, 1986.

This is a newly-created post with a particular responsibility to ensure a sound procedure for the gathering and dissemination of information on all aspects of microelectronics education within the region. It is hoped that the post can be filled from May 1, 1984 or earlier if possible.

Applicants are advised to consult their present employing authority with a view to securing secondment. Further particulars and application forms can be obtained from The Teacher Development Section, Education Offices, 14 Sir Thomas Street, Liverpool L1 6SL. Applications must be returned to the above address by February 20, 1984 at the latest.

The City Council is an Equal Opportunity Employer and welcomes applications irrespective of race, sex, marital status or disability.

(7923)

Analyst/Programmer £7,818-£11,166 pa inc. London, N11

A challenging opportunity within the User Applications team in Middlesex Polytechnic's Academic Computing Service.

Staff and students use an increasing variety of applications packages by means of a network based on DEC System-10 and Prime-550 systems and large numbers of microcomputers.

Responsibilities involve the implementation and maintenance of software in these applications areas: Statistical and Survey Analysis; Simulation and Modelling; CAI/CAL and Information Systems.

A degree in a numerate discipline is expected, together with at least three years' computing experience, including use of modern operating systems, system design, Fortran and at least one other high-level language, documentation writing and user liaison.

Write quoting ref N132 for further information and an application form, posting first class to: Personnel Office, Middlesex Polytechnic, 14 Cane Side, London N14 6PN. Closing date: February 20.

(7983)

Middlesex Polytechnic

PUBLIC SECTOR

GLC

Working for London

Computer systems and traffic control applications

The operation of Greater London's urban traffic network is continuously being reviewed and updated, using TRANSYT and SCOUT adaptive control where appropriate. This priority at signals, measures to assist pedestrian and automatic rescheduling of signal faults are currently being introduced and a new central computing facility supporting all signal control, monitoring and operating functions is underway, involving VAX and PDP machines, a local area network, and major software development.

To meet the increasing requirements in this work, we wish to appoint two senior managers:

Head of Systems & Software Traffic Control Applications Manager

To take responsibility for the effectiveness of these measures, at traffic terms, and for the development of the necessary control systems.

Applicants should be Chartered Engineers or equivalent and have at least 5 years appropriate management experience in on-line computer control systems or traffic control engineering.

Salaries: £15,000-£16,776 inclusive.

For an application form, to be received by 17th February 1984, send to: Transport & Development Division, City of London Council, Room 554H, The Gresham Hall, 51, 77th Street, London EC2A 3PU.

These posts are suitable for job sharing.

The GLC welcomes applications from all sections of the community, irrespective of their sex, ethnic origin, colour, sexual orientation or disability, if they have the necessary attributes to do the job.

The GLC is an equal opportunities employer.

Waltham Forest College

Principal Lecturer in Computing

The post of Principal Lecturer responsible for the leadership and development of the Computer Unit is tenable from 30 April 1984.

Salary - £13,164-£16,389 per annum inclusive.

Application forms and further details available from the College Personnel Services Officer, Waltham Forest College, Forest Road, Walthamstow, London E17 4JB.

Tel. No. 01-527 2311 Ext. 259

Closing date 21 days from appearance of advertisement.



ABERDEEN UNIVERSITY

COMPUTING SERVICES LTD. (AUCS)

Applications are invited for a newly created

PROGRAMMING POST

AUCS services include software development, software conversion, and consultancy, with a considerable involvement in desktop software and applications. AUCS works closely with the University Computing Centre, whose hardware includes a state-of-the-art IBM/AS/400 level 86 and various microcomputers. Languages used include FORTRAN, COBOL, and software development languages.

Applicants must have programming experience and the ability to adapt quickly to a wide variety of work. Desirable qualifications include a postgraduate or higher degree and relevant experience.

Appointments will be for three years with the possibility of extension. They will be on the University O/S 1A scale (£12,000-£15,000). Enquiries should be addressed to Stephen Gordon, AUCS, 128 Main Street, Aberdeen AB9 1UB (phone 0224 40241, ext. 9500), to whom applications should be sent by February 27, 1984. (7772)

BOX NUMBERS

Box number replies should be addressed to:

Box Number
c/o Computer Weekly
Quadrant House, The Quadrant
Sutton, Surrey SM2 6AS

GREATER GLASGOW HEALTH BOARD

A. SENIOR SYSTEMS DESIGNER/PROJECT LEADER

£9,404-£11,434 PER ANNUM

B. SYSTEMS DESIGNER

£8,367-£10,277 PER ANNUM

Applications are invited for the above posts in the board's computer centre which is located at 225 Bath Street, Glasgow. The centre is equipped with an ICL 2988 computer and processes a wide range of applications for the Health Service. Both posts are for the Scottish standard immunisation recall system.

The successful candidate for post A, will be responsible for the project team development of the system and will therefore require considerable experience in computing and proven ability to design and install complex systems. Programming experience is desirable while knowledge and experience of the National Health Service would be advantageous.

Candidates for post B should have had relevant experience and a good educational background.

Additional allowances may be payable for relevant experience.

Application forms and job descriptions may be obtained from the Area Personnel Officer, Greater Glasgow Health Board, 225 Bath Street, Glasgow G2 4JT (Tel. No. 041-204 2785, ext. 2600) to whom completed forms should be returned not later than Friday, March 2, 1984.

Please state clearly for which post you wish to apply.

ELLA THOMSON
REX STEWART & ASSOCIATES
DIRECT LINE 041-204 1776
776844 REX/AGS

(7764)

SMR

Sales & Marketing Recruiters Ltd
Leaders in High Technology Recruitment

MICROCOMPUTERS SALES AND SALES SUPPORT

THIS COULD BE THE START OF
SOMETHING BIG!

Probably the most sought after job opportunities as far as accomplished and ambitious salespeople are concerned is the chance to join a major foreign company with an outstanding product range who is just setting-up in the U.K. The implications of the 'ground floor opportunity' are obvious. However it is not very often that such a situation occurs involving a multi-national company with revenues in excess of £500 millions and employing over 25,000 people worldwide!

So determined is our client to succeed, that the investment in U.K. manufacturing facilities has trebled within the last two years. Early success has already been achieved and the product/quality performance may be judged by its rapid revenue growth.

This company is about to launch a powerful range of home and business microcomputers with performance and prices that will amaze you, supported by application packages and a comprehensive range of languages, system utilities and operating software.

Requirements now exist

THROUGHOUT THE U.K.

AREA SALES MANAGERS

Candidates should be directly experienced and successful salespeople who are currently selling microcomputers to Dealers, Distributors, Specialist Computer Retailers, Major End-Users, etc. They will be self-motivated and industrious individuals, able to create and implement sales strategy and manage a small team of sales and technical support people. An attractive compensation package will be offered including a guarantee against commission earnings and a company car is provided. Territories are available throughout the U.K.

SALES SUPPORT ANALYSTS

Candidates should have substantial experience of either the business or home microcomputer market and able to handle the technical requirements of distributors, retailers and large-scale end-users. Knowledge of CPM and BASIC is essential and fluency in commercial applications will be advantageous. Opportunities exist throughout the U.K., an attractive salary will be paid and a company car is provided.

SALES TRAINEES

These opportunities will appeal to those young people with obvious flair for selling who have significant experience of utilising microcomputers or are already involved in marketing or merchandising to distributors, retailers, etc. The job entails the provision of sales and marketing support, including the operation of varied promotional campaigns to a wide selection of clients and reports to the local Area Sales Manager. Opportunities exist throughout the U.K., an attractive salary will be paid and a company car is provided.

All these excellent job opportunities carry considerable fringe benefits, a company pension, but above all they offer considerable potential for job satisfaction, high earnings and career advancement.

Please provide complete career details to Roger Dodd (Midlands and North) and Lindsay Howie (South) quoting reference SDB/024.

LONDON & SOUTH

29 Oxford Street,
London W1. (01) 734 9776

MIDLANDS & NORTH

Cathedral House, Beacon Street,
Lichfield, Staffs. (05432) 56612

Answering Service after 6 pm and weekends
SALES TRAINING, MARKET RESEARCH, RECRUITMENT

SMR

Sales & Marketing Recruiters Ltd
Leaders in High Technology Recruitment

SALES EXECUTIVES COMPUTER AIDED ENGINEERING HARDWARE & SOFTWARE SYSTEMS

It's nice to have the opportunity of satisfying the recruitment needs of a fast growing international organisation whose name is a by-word for innovation and product integrity, a reputation that is synonymous with all that is excellent in technological progress, a name that implies instant credibility. Such is our client, a company with manufacturing capabilities that extend from computer systems to micro-chips and more particularly, very special skills in the provision of integrated CAD/CAM systems (CAE if you prefer it!).

The last 3 months have been the most successful in the company's history and continuing growth has now created the need for additional salespeople to sell Computer Aided Engineering Systems to mechanical engineering and manufacturing organisations throughout

MIDLANDS & NORTH SOUTHERN ENGLAND

Candidates are likely to be currently employed in selling CAD/CAM systems for a recognised major supplier or involved in the provision of engineering related computer services, preferably with an engineering qualification. Sales targets are relatively low for this sector of the market place and anticipated on target earnings will be

£32,000 + COMPANY CAR

Please contact Alasdair Scott (London), or Roger Dodd (Lichfield), quoting reference SSA/024.

This job is available to both men and women.

LONDON & SOUTH

29 Oxford Street,
London W1. (01) 734 9776

Answering Service after 6 pm and weekends

SALES TRAINING, MARKET RESEARCH, RECRUITMENT

MIDLANDS & NORTH

Cathedral House, Beacon Street,
Lichfield, Staffs. (05432) 56612

Minicomputer Operator

...with Systems Analysis ability
Manchester

This interesting job at Wilson's Brewery demands a competent and intelligent computer operator with the ability to progress quickly towards the analysis, design and implementation of micro based projects. We currently use Data General Eclipse and Nova minicomputers and a range of IBM and Apple microcomputers.

Aged around 25 you should have a good academic background (degree/National Diploma) and sound training in Management Services, Systems Analysis or programming.

A two shift system is being worked - for which a shift premium is paid.

An attractive salary is offered together with a discretionary bonus and the usual benefits associated with a progressive company.

Write with full career and salary details to: Mr J. Dale, Senior Personnel Officer, Wilson's Brewery Limited, Mossall Road, Newton Heath, Manchester M10 8PA.

WILSON'S

Chr. Michelsen Institute is an independent multi-disciplinary research institute which serves industry and society in Norway and abroad. The work of the Institute is financed by means of government grants and by R and D Contracts.

CMI's dept of science and technology has a staff of 105, most of whom are graduate scientists or engineers.

COMPUTER GRAPHICS/ANIMATION

Applications are invited from highly qualified and suitably experienced persons for a position in computer graphics and animation. Applications with a Ph.D or M.Sc in computer science will be preferred.

Research activities in the dept of science and technology are concentrated in the following areas:

- Powder technology, dust and gas explosions
- Instrumentation and measurement technology
- Remote sensing and image processing
- Signal processing, including seismic interpretation
- Mechanical design and precision engineering
- Electronic design

Many of our projects in these fields utilise computers for simulation, data reduction, and design purposes. In order to enhance our ability to interpret and understand computer output, we plan to expand our use of computer graphics and animation techniques. Further details of this challenging appointment can be obtained from Haakon Helland at CMI. Deadline for applications is February 20, 1984.

CMI offers competitive salaries and an attractive work-place on the outskirts of Bergen, on the west coast of Norway. The Institute will assist in obtaining suitable accommodation. Applications, accompanied by curriculum vitae, should be sent to the Director, Dept of Science and Technology.

Chr. Michelsen Institute
Fantoftvegen 38
Fantoft, Bergen, Norway
Tel.: + 47 5 294410. Telex: 40008 CMI-N

SALES BIT

Quality of Management - 82

An ignorant salesman is a walking disaster

FOR many companies, the only form of training that ever occurs is product training, which is usually limited to a few days for new recruits or for the salesforce at large prior to the launch of a new product.

This is not sufficient. The emphasis must always be upon balanced training, for only in this way can a complete salesman be produced.

As 1984 is the 200th anniversary of the death of Samuel Johnson, I would like to start out by quoting him on the subject of knowledge, and more particularly, in the context of the most precious of qualities, professional integrity: "Integrity without knowledge is weak and useless, and knowledge without integrity is dangerous and dreadful."

First of all, let's consider the question of product knowledge by way of an extract from my book, *All About Selling*:

"There are many reasons why familiarity with one's product and its applications is important, and none more so than the self-confidence that it generates. There is no point in taking up any job if one cannot feel 100% committed to it, and it is not really feasible to enjoy a job without having the confidence of knowing what it's all about."

"Knowledge is a great professional strength that quickly earns not only the respect and admiration

Knowledgeable sales people have an unshakable self-confidence that is quite removed from arrogance

tion of both clients and colleagues, but also makes sales success so much easier. I know many salespeople who are successful, despite the fact that they are not particularly good at selling.

"Their secret is that they know so much about their product, and the ways in which it can be used, that people virtually give them the business because they feel assured that someone so familiar with the subject will get the solution right and will be a pillar of strength in times of trouble."

"Competitors who could apparently sell them under the table fail to get into the final reckoning because they do not have the skills to discover the real problem and the best solution."

"It is easy to identify salespeople who have complete product and applications knowledge. They have an unshakable self-confidence that is quite removed from arrogance. They exude a quality of assurance that inspires those around them with confidence, they think and act with only success in mind."

Sadly, such comprehensive knowledge is seldom the case for most people within the typical salesforce, and this is particularly the case within the computer industry where the gap between superficial knowledge and total ignorance can be exploited to an alarming degree.

I can think of nothing more horrendous in selling than the blind leading the blind. The act of both buyer and seller believing in the package that is the basis of the transaction.

The buyer believes it because the salesman says so, and the salesman believes it because he wants to believe it, or no one told him otherwise.

An area of computer sales I find particularly alarming is the turnkey-micro sector. It's such an easy area for the aspiring entrepreneur to get into. There are lots of microcomputers at prices which grow daily more astonishing, and

Suppliers can have on their hands a commercially unacceptable unexploded bomb

there is a multitude of commercial applications packages, available on almost any micro, from a host of software houses.

So, what easier than putting the two together and becoming an instant turnkey systems house?

For the salesman who enters this particular arena with established selling skills and little knowledge of computers or applications, the great temptation is to create up his initial feelings of inadequacy with a selection of appropriate buzzwords.

This is likely to fool the uninformed end-user who typically takes the subordinate role of the ignorant who is soon impressed and believes what he is told. With the gross shortage of adequate salespeople within the computer industry, this is a more common problem than many people realise.

Many small companies have neither the financial resources nor the career potential to attract established salespeople from other parts of the computer industry and are therefore obliged to look outside the industry. Let me hasten to add that I see nothing wrong with that, with one major qualification, that the company concerned has the resources and commitment to thoroughly train such recruits in product applications and selling knowledge.

Unfortunately, this is seldom the case and for many, the financial pressure to get new salespeople out on the road and earning money is quite considerable.

Consequently, salespeople fresh out of photocopyers, stationery, franking machines, typewriters and the like, find themselves out in the world advising people on the extremely serious implications of the computerising of their business problems, within days of entering the computer business.

This situation puts the credibility of the industry at great risk. All suppliers of computer systems that put their sales people out on the road without their having complete knowledge of their product and its applications, have on their hands an unexploded bomb that is likely to bring disaster upon their unsuspecting customers and possibly upon themselves.

Alan Williams

PUZZLE ANSWER

ONE die is standard, and the other has three six-faces and three blanks.